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Edited by HENRY C. PEARSON—Offices No. 150 Nassau Street, NEW YORK.

Vol. XXXIV. No. 1.

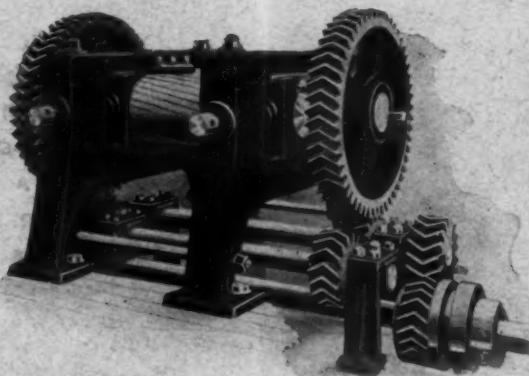
APRIL 1, 1906.

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THE INDIA RUBBER PUBLISHING CO.

No. 150 NASSAU ST., NEW YORK.

HENRY C. PEARSON,
EDITOR.**HAWTHORNE HILL,**
ASSOCIATE.

Vol. 34.

APRIL 1, 1906.

No. 1.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank draft, Post Office Order, or Express Money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Post order, payable as above.

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Entered at New York Post Office as mail matter of the second-class.

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TENDENCIES IN INSULATION WORK.

DURING the past few years the scarcity of crude rubber has been so keenly felt in every class of manufacture involving its use, that substitutes for it have been sought more actively than ever before. The immense growth of the automobile industry has rendered the shortage of material more serious than in past years, and the wire manufacturers have been hard pressed. Now, truth to tell, there is no genuine substitute for rubber. That wonderful material has qualities, mechanical, chemical, and electrical, which cannot be duplicated. For some special purposes fairly successful substitutes have been introduced, but speaking broadly, rubber still defies imitation.

The electrical industry requires immense amounts of insulating material and it has been hard hit by the rapidly rising cost of the raw material. Half a dozen years ago the result of scarcity of rubber, and keen competition, appeared in rather disastrous form. A great deal of very poor rubber compound was used on insulated wire, producing a covering positively inadequate and unsafe. There are of course rubber compounds which for all ordinary insulating purposes are entirely adequate, but a great deal of "cheap and nasty" wire was put out. Within the later years the fire underwriters have taken active steps to prevent the use of the wretched stuff referred to and have encouraged the adoption of substantially fireproof insulations containing no rubber at all.

The fact is that a bad rubber compound is less safe and reliable than a rubber-free covering, provided the latter is intelligently used. The strongest present tendency in insulated wire manufacture is toward the use, not of rubber substitutes in the ordinary sense of that term, but of substitutes for rubber making no pretense toward similarity to rubber in general properties. Thus for general wiring the influence of the fire underwriters has tended to produce two sharply defined classes of insulation, each with its appropriate field of usefulness—first, high grade rubber insulated wire; second, "slow-burning" or similar wire; and has weighed heavily against the use of inferior rubber compounds. In cables for underground use, too, the tendency is to use either high grade rubber or none at all. To a very great extent the lower grades of rubber cable have been replaced by paper and oiled linen insulated cables, which within certain restrictions are even more successful than rubber, reserving high grade rubber for uses to which it is especially fitted. This tendency we think is a healthy one. It relieves rubber of the odium that attaches to cheap and bad imitations, and sets free the rubber that would be thus misused for purposes of general value.

For certain electrical work there is nothing anywhere nearly as good as a first class thick rubber insulation and there will be a steadily increasing demand for this grade of goods. The less rubber wasted on inferior and dis-

reputable goods the better for the general trade. Every ounce of pure rubber that the world can at present furnish is needed for purposes which admit the substitution of nothing else. Hence, until rubber culture has in course of years renewed the now depleted supply, every really successful effort to replace this substance in its less general uses is a relief.

Rubber occupies among non metallic substances a position akin to that of platinum among the metals. For certain uses it is incomparable to anything else. Like platinum it is produced in amount relatively so small that the discovery of a new use or the sudden increase of an old one produces an immediate and powerful effect upon the market. The search for new sources of rubber—like that for new platinum deposits, has been only moderately successful, but fortunately rubber can be cultivated, while the platinum supply cannot be replenished. In each case the growth of the electrical arts produced a greatly increased demand.

It is fortunate that experience has taught methods of replacing rubber for insulating purposes, else the price of the raw material would be still further enhanced. We look to see further advances made so that rubber can be set apart for its more valuable and important uses, and other materials be used where only the minor qualities of rubber are sought to be duplicated. Thus vulcanite can for certain purposes be adequately replaced, just as pure rubber and rich rubber compounds can be replaced in insulating wires. The extensive present use of high voltages has considerably modified too the demands for insulation. At the highest line pressures nothing but bare wire is used since no practicable thickness of even the very best insulation is able to stand up long against the combination of weathering and voltage strain.

At the next lower range of pressures, employed for instance in arc lighting, insulation is likewise of only moderate value and its purposes are served satisfactorily by the so-called weather proof wires. In interior work on the contrary, although the voltages tend to increase, first class rubber insulation is not only adequate but most valuable, and will be in constant demand in increasing quantities in spite of the extensive use of "slow burning" wire, an improved form of the "underwriter's" wire of twenty years ago, under special conditions. Thus in spite of the lessened use of rubber covered wire for some purposes, there remains a demand for it which is quite all the available rubber supply can comfortably stand in addition to the other multifarious calls for it. Until there is a larger supply of the raw material, a largely increased demand for rubber insulation would be rather a dubious blessing.

RUBBER DAY IN CONGRESS.

THE promoters of the "Colorado rubber" scheme have been trying to get a lift from the United States government. Evidently private investors have

not been putting up money fast enough; an official indorsement of "rabbit weed" from Washington might help the sale of company shares. At any rate, a Congressman from Colorado brought in a bill to lease to a rubber company in that state, as he expressed it, "a very small tract of useless non agricultural land" in the public domain. Now the preamble to this bill states that the company in question—

has after an exhaustive search, extending over several States and Territories, determined that the plant [*Picramnia floribunda utilis*] has reached its highest development (so far as the percentage and quality of its gum is concerned) in the specimens found on the tract of desert land described below [viz.: in the bill].

The land involved, it appears, can be bought for all time for a little more than \$6000, but the company seeking to avert the threatened rubber famine by developing a new source of supply—this company capitalized (on paper) for hundreds of thousands of dollars—rather than buy outright the pick and choice of "rabbit weed" land for \$6000, prefers to get control of it through political "pull."

But the course of a bill in Congress does not always run smooth. Perhaps the introducer of the "Colorado rubber" bill had annoyed some of his fellow members. An amendment was proposed, avowedly to prevent—this infant rubber concern from being either partly purchased or crushed out by the great rubber trust of the United States, and almost the balance of the world—an amendment proposing that in the event of the "rubber trust" going into "rabbit weed," the leased lands should revert to the government. But the father of the bill declined the amendment.

The bill was before the House on March 16—on a request for unanimous consent for its consideration—at a time when the heated passions excited by the recent debate over the creation of a new State or two had not cooled off, and one Congressman felt incensed because the Speaker was willing to have the rubber bill come up, while, as reputed, using his official position to obstruct more important legislation. Here is an extract from the *Record*:

MR. SHACKLEFORD. - - - Who stands to-day between a progressive, enlightened people and the statehood to which they are entitled? You sir [addressing the Speaker]; only you. You crack your whip and a majority of the H use comes at your feet. You turn your thumbs down and the House deals a death blow to prostrate, bleeding Oklahoma. - - -

MR. TAWNEY. Mr. Speaker, I make the point of order that the gentleman is not speaking to the question before the House.

THE SPEAKER. The Chair was not able to hear the remarks of the gentlemen and does not know whether that point of order was well taken or not.

And so the talk ran, touching anything but rubber. But the end had to come some time; was there unanimous consent to consideration of the Colorado rubber bill? The deciding speech fills only a line:

MR. TAWNEY. Mr. Speaker, I object to the consideration.

On a later day, however the Colorado bill was brought up again in the House and passed. But not until a member from Massachusetts had risen "to show that it

is exciting solicitude among the rubber manufacturers of the country and therefore should be fully and carefully explained to demonstrate that they cannot be injured by its passage." Still later the bill passed the Senate, and it now awaits the signature of the President.

THERE HAVE BEEN MANY COMPLAINTS against the New York subway, some just and some unjust, and some that have gone wide of the mark. Many complain of the draughts, while others complain of the lack of air. Now these two complaints seem to conflict, since there can hardly be too much and too little air at the same time and place. Some time ago a citizen who evidently objected to air, suggested that the subway company make their trains solid vestibuled by using the rubber device employed on railroad trains, which would have the effect, as he said, of "completely excluding the air from the platform." Such a scheme would undoubtedly increase the trade in rubber, but an increased trade in fresh air would doubtless be of more immediate utility to the majority of "ground hogs" who use the subway regularly.

THE RUBBER EXHIBITION to be held in the Far East in September, to consist of products of rubber plantations, and demonstrate the various methods, processes, and mechanical appliances involved, doubtless will attract more widespread attention than any other agricultural show ever organized. Will our friends who are planting in Mexico, when they have been so long "in rubber," be able to make as good a showing as their British cousins?

RUBBER IS WATERPROOF in more senses than one. There was a million pounds of the stuff on a steamer which narrowly escaped being wrecked just outside New York harbor in a recent storm. But if the vessel had been lost, doubtless much of the rubber would have been recovered, none the worse for a sea bath. At the same time England's most largely capitalized rubber company was wringing several millions of dollars of "water" from its assets sheet, its directors congratulating themselves upon the excellent condition of the company in spite of the inflated issue of shares outstanding for so long. Evidently rubber is impervious to water however applied.

WE HAVE FOLLOWED WITH INTEREST the records of the London auctions in relation to the rubber coming from a certain plantation in the Malay States. It appears that at the last half dozen sales, 156 cases of rubber from this estate have been offered, of which 129 brought 6 shillings [= \$1.46] per pound, and some lots as high as 6s. 3¼d. [= \$1.52½]. Even the "scrap" brought 5s. [= \$1.21½] and upward, except part of one lot of 8 cases, which went under the hammer at 4 shillings and a farthing. These facts are of such interest, for legitimate purposes, that it is to be regretted that their publication helps certain promoters to sell even good rubber properties for more than their value.

THE GERMANS HAVE REFUSED TO BELIEVE, with some Americans, that submarine cables could be made only in England. Hence they have gone ahead and put themselves in a position to make their own ocean cables. Some inter-

esting comments on their success are reproduced on another page from a high English source. Meanwhile we are obliged to chronicle the news of two cable laying operations in the Pacific, backed by American capital but employing the products of English factories. If America continues to buy cables abroad, doubtless we shall soon see German factories seeking contracts here.

THE BEGINNINGS OF THE RUBBER INDUSTRY continue to be recalled by the anniversaries of the survivors, now few in number, of the era before vulcanization was known. Some historical matter of this sort we print this month, not the least interesting feature of which is the pointing out of the great changes that have taken place in rubber trade methods within the lifetime of persons still active in the trade. Capacity for such change is the best evidence of vitality, and let us hope that it will long continue.

AT A RECENT BANKERS' BANQUET in Philadelphia Mr. Simeon Ford, of New York, made a witty speech, in which he favored elastic currency. Playing on the name, he said that he would like a currency so elastic that a \$5 note could be stretched over his hotel bill, and then snap back into his pocket. This amusing turn to the word "elastic" recalls the common complaint of economists, that the United States currency always stretches the wrong way. When business is dull, for want of currency, it is to the interest of bankers to so manipulate their bond holdings, that the volume of currency is further restricted. The reverse happens during brisk trade, so that the ups and downs of business are always exaggerated, much to the distress of straightforward dealing, which wishes neither booms nor panics.

IF THE DEMAND FOR RUBBER TIRES continues to increase, the rubber planters can feel encouraged, even if every other use of this commodity should cease.

BRAZILIAN IMPORTS OF RUBBER GOODS.

OFFICIAL statement of values (in milreis), during two calendar years. [These figures doubtless fail to include many articles embracing more or less rubber, but classified under other headings than "manufactures of rubber.":

ORIGIN.			DESTINATION.		
COUNTRIES.	1903	1904.	PORTS	1903.	1904.
Germany.....	873,259	797,664	Manaos	77,640	84,950
United States...	150,776	156,639	Para	155,725	145,940
France.....	289,371	275,602	Pernambuco...	135,703	92,757
Great Britain...	767,308	714,016	Bahia	89,728	90,329
Italy.....	189,872	218,164	Rio de Janeiro,	244,261	1,025,847
All Other.....	104,237	118,677	Santos	377,203	585,292
Total.....	2,374,823	2,280,762	Porto Alegre...	104,168	97,537
			Other Ports...	190,395	158,110
			Total	2,374,823	2,280,762

EQUIVALENT with exchange at 12 pence to:

	1903	1904
United States gold	\$577,853.81	\$554,966.41
Sterling	£118,741 3s.	£114,038 2s.

MERIDEN Rubber Corporation, of which Herbert J. Foster is manager, in Vera Cruz, reports to its shareholders that two men have been at work tapping, producing from 6 to 9 pounds of dry creamed rubber per day.

FIFTY YEARS IN THE RUBBER TRADE.

ON March 20 Mr. Theodore E. Studley, secretary and treasurer of the Vulcanized Rubber Co. (New York), received the congratulations of many friends on his seventy-fifth birthday, and was tendered a dinner at the Arkwright Club, in New York. The month also embraced the fiftieth anniversary of his connection with the India-rubber trade. The issue of this Journal for March 10, 1896 (page 178), contained a reference to Mr. Studley's fortieth anniversary as a



rubber man, but that was ten years ago, and the record may well be repeated with some additions.

Mr. Studley came to New York in 1856 to accept a position as salesman with the New Brunswick Rubber Co., which, in addition to manufacturing footwear dealt in a general line of rubber goods, at No. 100 Liberty street,

their selling department being in charge of Henry G. Norton. The immediate reason for Mr. Studley's coming was that his former employer in a Worcester store, Olney Fenner Thompson, had gone out of business for himself and become a salesman for the New Brunswick company, and it was through him that Mr. Studley gained an introduction to the house. Owing to the financial stringency of the following year the New Brunswick company decided to give up its general business and confine itself to manufacturing. The general business was taken over by Mr. Norton. In 1858 Mr. Studley became a partner in the house, the style becoming H. G. Norton & Co., and in time this became the most important distributing house in the country for rubber goods. For instance, this house at one time were sole distributors of the products of the New York Rubber Co., and a large percentage of the output of the India Rubber Comb Co., the Novelty Rubber Co., the Goodyear Glove company, and several other factories. When the National Rubber Co. (now the National India Rubber Co.) was formed, Norton & Co. became the general selling agents.

The old rubber shoe manufacturing firm of Brown, Bourn & Chaffee, of Providence, were interested in the National company, and later Mr. Augustus O. Bourn (in time governor of Rhode Island, and still engaged in the rubber industry) became a partner in H. G. Norton & Co. Mr. Henry C. Norton, now of the Pacific Coast Rubber Co. (San Francisco), was a nephew of Henry G., and began his business career in his uncle's house in New York.

About 1873 Mr. Norton retired, on account of declining health, and the general business of the firm was sold to the Rubber Clothing Co., which took on the name Goodyear Rubber Co., and which has since continued to be an important factor in the trade. The druggists' sundries department

of the Norton business was continued by Mr. Studley, with a partner, until 1877, when Mr. Studley accepted a proposition from the Goodyear Rubber Co. that he take charge of their New York downtown branch, a connection which lasted for twenty years. That branch being discontinued then, Mr. Studley became associated with the business which is now incorporated as the Vulcanized Rubber Co.

Mr. Studley for a number of years has been in the habit of lunching on alternate days at the Hardware Club and at the Arkwright Club, at each of which he is a member of a coterie of friends, who sit regularly at a "round table." The members of these two coteries are personally acquainted, and this year united in tendering a dinner to Mr. Studley at the Arkwright Club, at which 30 persons were present. The affair was wholly informal, but all present made speeches congratulating Mr. Studley and testifying to the esteem in which he is held by all who know him. Nearly a hundred letters and telegrams were received, the spirit of which is indicated by the one which follows:

DEAR MR. STUDLEY: I regret exceedingly that I was not in the city on your seventy-fifth birthday. I feel that you are seventy-five years young instead of seventy five years old. Allow me to emphasize my good will and admiration.

I want to have the pleasure of handing you my felicitations on your one hundredth birthday.

Sincerely your friend,

The surprise of the occasion was the presentation to Mr. Studley of a "black jack" set, of tray, pitcher, and half dozen goblets of silver, mounted with leather, and made by the Gorham Manufacturing Co.

Mr. Studley said to an INDIA RUBBER WORLD representative that he was unable to recall any member of the rubber trade at the time he entered it—at least in New York—who still survives, except Mr. Frederick M. Shepard, who had come to New York in 1853 to become connected with the Union India Rubber Co., and is still at the head of the Good year Rubber Co., which succeeded to their business. Mr. Studley is to day in prime health, in constant attendance upon business, and bears but few evidences of having survived so many of the early leaders of the trade. It may be noted that an influential director of the New Brunswick Rubber Co. at the time Mr. Studley entered its employ, was Mr. John Acken. It was largely upon his insistence that the company, following the panic of 1857, decided to give up its general rubber line. Mr. Acken, by the way, was the father of the late William H. Acken, long president of the New York Rubber Co., an obituary notice of whom appeared in the issue of this Journal February 1, 1906 (page 163).

Mr. Studley, by the way, claims to be the only man in the trade now who handled the "pure Pará" rubber overshoes, which were at one time the only "rubbers" in the market. When a boy under twelve, in order to get a little pocket money, which he says he really needed, he used to spend Saturday afternoons in a Worcester store, trimming, cleaning, lasting and varnishing the dealer's stock of shoes of this type. Hence he dates his first connection with the rubber trade back to 1842.

ITALY.—The establishment Manifatture Martiny, at Turin, is now making automobile tires, in addition to its standard lines of surgical instruments, surgical India-rubber goods, and waterproofs.

NOTES ON THE "CASTILLOA" RUBBER TREE.

THE roots of young plants of *Castilloa elastica* (the Central American rubber tree) are well developed and branch a good deal. They are very thickly clothed with root hairs at the tips. These hairs are very fine and fragile and in transplanting young seedlings great care should be taken not to injure them. I believe that the condition of the roots of a tree makes more difference with the amount of rubber it will give than the leaves. A tree with small yield is generally healthy in the leaves, but has some defect in the roots. Transplants are likely to have defective tap roots and on this account blow over.

There are two distinct types of branches on the *Castilloa* tree—temporary and permanent. All the branches for the first three or four years are temporary. They grow alternately on different sides and almost at right angles to the trunk. After some time the temporary branch drops, when beside the scar which is left will be found a small bud. This bud is either to the right or left of the scar, but never above or below it. Whenever one such bud on a tree grows to the right all the other buds do the same, and *vice versa*. I have never found a tree with buds on both sides. Such buds are the beginning of permanent branches. Only a small number grow into branches, but any of them can be forced by cutting through the bark to the wood, above the bud, and thus severing the sieve tubes connecting the leaves and roots. These permanent branches project upward at an angle of 45° or less. Forced branches do not grow as fast as natural ones. The permanent branch bears temporary branches of its own, and later may bear other permanent branches.

This question of branching may prove important. Some planters claim that trees that put out permanent branches early grow faster and yield better than later branching trees. Others claim that branching is not good for the trees. I believe that branched trees grow somewhat faster because they get a larger leaf surface, but I do not think that this leaf surface affects the amount of latex. Trees planted far apart branch more freely and earlier than those which are close together. There also seem to be more branches on trees grown in the sun than in the shade. It has been suggested that it would be well to grow branches on the trees—by the forced method above described—in such manner that the trees could be ascended by tappers without a ladder. The fact that some temporary limbs turn permanent might be investigated, and perhaps a way could be found to make them turn permanent at will, if desirable.

The *Castilloa* is a fast growing tree. It appears to grow faster between the ages of two and four. The leaf surface of the tree, and consequently the amount of light it gets, has a great deal to do with its growth. Shade grown trees are not nearly so large at the same age as those grown in the sun. Some planters believe that trees grown in at least partial shade yield more latex, but if this is so, I do not believe that they yield enough more to pay for the loss in growth, for under any ordinary conditions the trees yield in proportion to their size. Monthly measurement of a large number of *Castilloa* trees shows that they grow on an average of about $\frac{1}{4}$ inch per month in circumference. This varies, however, the trees sometimes growing not at all for a month, and growing $\frac{1}{2}$ inch or more the next month. An experiment in the

affect of tapping on growth did not show that it made any difference.

The proper distance in planting depends a good deal on how soon the plantation is to be tapped. Trees planted 10×10 feet begin to crowd each other at about six years. If the plantation is to be tapped at this age, or earlier, this is a good distance for planting. When the trees get older, the poorer and weaker ones can be bled out. The experiment of planting four trees in a hole shows that it is possible for two, three, or even all four to grow well and apparently not to hinder each other. If these trees continue as they have begun, it seems to me that the way to grow the most good trees on a given piece of land would be to stake the land at a distance of 15 or 20 feet, and to plant a circle of 8 or 10 trees about each stake. Any trees grown in this way which did not keep up to the others should be cut down, and by the time they are ready to tap there should be three or four good trees in each group. This method would avoid one trouble which has shown itself where one tree was planted to a hole, and that is that when the time for tapping came many of the trees were poor and stunted and not worth anything. This irregularity of growth loses much time and can be avoided where only the best trees are allowed to grow.

Whatever the method of tapping employed for *Castilloa*, the healing of the cut requires to be considered. The general idea has been that the cut must not be made too deep, and this is true to a certain extent. But it may also be made too shallow. Between the bark and the wood is the growing part of the tree, a tissue called cambium. This part alone has the powers of forming new bark and new wood. If a cut is made which does not go into the cambium, the cut will not heal over with new material. Of course, it will dry up and turn black, and in this way protect the tissue under it, but the piece of bark taken out is gone for good. On the other hand, a cut made just to the cambium will heal quickly.

The Pará rubber tree (*Hevea*) shows some important differences in latex from the *Castilloa*. Of course all that I have noted on this tree is done here in Nicaragua and it may behave differently in Brazil or Ceylon. The first noticeable thing in cutting the Pará tree is the small yield. When a *Castilloa* is tapped the cut is immediately filled with latex, which runs in a small stream from the lower end. The *Hevea* when first cut shows no latex. In a few seconds it begins to appear in drops on the cut surface and after 3 to 5 minutes begins to drop from the end of the cut. The small yield at the first tapping seems to be balanced by the fact that more can be got by multiple tapping. In Ceylon, according to report, the yield increases each day, but here I have noticed no increased yield. I tapped one tree nine days in succession, and though it yielded every day (a thing which *Castilloa* would not do) the yield decreased instead of increasing. The *Hevea* tree will not do here because there is too much labor involved in multiple tapping. I think the trees here, if tapped rightly, would yield as much as those in Ceylon, but as labor costs so much more, it would not pay. I am confident from comparing yields printed in THE INDIA RUBBER WORLD that *Castilloa* will yield as much with four

tapping operations a year as *Hevea* will with ten or twenty when the trees are the same age.

A FORESTER.

Bluefields, Nicaragua, January, 1906.

RUBBER YIELD IN KALUTARA.

THE last annual report of the planters' association of Kalutara district, Ceylon, shows the following increase in the acreage of Para rubber under cultivation at the end of two years:

	1904	1905
Rubber alone.....acres	3,128	6,038
Rubber planted in tea.....	6,759	7,256
Total.....	9,997	13,294

It is likely that this year a considerably larger acreage of new land will be planted, but it is not thought that very much more tea will be planted up. During the year 101,978 pounds of rubber were gathered, from 88,667 trees, or an average of 1.15 pounds per tree. It is estimated that 43 per cent. of the trees were tapped for the first time.

CEYLON AND THE MALAY STATES.

MR. R. W. HARRISON for many years interested in the progress of rubber planting in Ceylon, his headquarters being in Culloden, has gone to the Federated Malay States and will make his headquarters at Klang, Selangor, where he will have charge of "Highlands," "Lowlands," and other estates in which Mr. W. W. Bailey is interested.

=Dr. A. H. Suggett, of the Rio Michol Rubber Plantation Co. (San Francisco, California), writes to *The Times of Ceylon* that he expects to visit the Far East some time this year to study rubber culture as developed there. He writes: "We will begin early in 1906 to tap our cultivated trees [in Mexico] and my mission in Ceylon and the Federated Malay States is to learn all that I can about the practical part of rubber culture. We have only the Indian or Mexican, methods to follow, which are very wasteful and must be improved upon."

=Much interest is felt in the Far East in the rubber exhibition which it has been decided to hold at the Ceylon botanic gardens, at Peradeniya, on September 13-15 next.

=The annual report of the Ceylon Planters' Association for 1904, in dealing with the rubber planting situation, said that "a safe estimate for 1905," as to exports of rubber produced, "would be some 120,000 pounds." The actual figures proved to be 168,547 pounds. It is interesting to see a promise so well justified by performance.

=The Ceylon Planters' Association referred to a committee the question of asking the government to place an export duty upon rubber seeds, but the proposal not appearing to meet the unanimous approval of those interested, no further action will be taken. *The Times of Ceylon*, however, hopes that the information gathered by the committee will be published.

CONSOLIDATED MALAY RUBBER ESTATES, LIMITED.

REGISTERED in London October 7, 1905; capital, £75,000 = \$364,987.50], to acquire the "Leigh," "Atherton," and, "Ainsdale," estates, in Negri Sembilan, Federated Malay States owned by H. and C. E. Tunncliffe and F. M. Porcher, and comprising about 4300 acres, of which 750 are planted in coffee and rubber (*Hevea Brasiliensis*) and *Ficus elastica*). The object is to grow rubber, coffee, and other crops. First directors: G. G. Anderson, J. L. Shaud, and W. T. Wilson, all of England.

The estates have been in charge of F. M. Porcher, Port Dickson, Negri Sembilan.

THE RIO MICHOL RUBBER PLANTATION CO.

[Plantation "Rio Michol," in the state of Chapas, Mexico. Office: Merchants' Exchange building, San Francisco, California.]

[See THE INDIA RUBBER WORLD, January 1, 1904—page 127.]

THE report of the shareholders' inspectors shows a favorable rate of development of rubber on this plantation during the year, and also on the 550 acres acquired early in 1904 from the Los Angeles Rubber Plantation Co., now no longer active. Experiments made in tapping young planted trees are reported satisfactory, under methods which, applied to the wild trees on the estate, have produced a superior quality of rubber, shipments of which have been made to San Francisco and New York. The company hope to derive a good profit from ixtle and jocolin fibers.

WISCONSIN RUBBER CO.

[Plantation near El Salto, department of Palenque, state of Chiapas, Mexico. Office: Fairchild block, Madison, Wisconsin.]

[See THE INDIA RUBBER WORLD, March 1, 1905—page 189.]

A RECENTLY issued report states that 1677 acres were cleared and planted to rubber in 1905, in addition to 800 acres planted the year before. The company purpose planting in time a total of 5000 acres. The estate is one of four worked under contract by the Mexican Development and Construction Co., of which John R. Markley is president. Corn is grown as a side crop, with a large yield reported, the proceeds of which is referred to as affording dividends to the investors in the company—6 per cent. for 1904 and 8 per cent. for 1905, on the paid up capital. The company is capitalized at \$1,500,000, in 5000 shares of \$300, of which 1600 are reported to have been sold, on the system of installment payments.

RUBBER MONOPOLY IN NICARAGUA.

THE concession granted by the government of Nicaragua for a monopoly of the exports of crude rubber from the department of Zelaya, districts of Prinzapolca and Rio Grande, mentioned in THE INDIA RUBBER WORLD October 1, 1905 (page 14), is the subject of a report by the United States consul at San Juan del Nore, Mr. Ryder, who writes:

It is reasonable to fix the quantity annually shipped from this district at about 500 000 pounds. This will produce a revenue to the *cessionnaire* at the present rate of \$50,000 (gold) per year, or \$500,000 during the existence of the contract. Yet the government exchequer is enriched only to the extent of \$1600 in full for the term of 10 years.

GUAYULE FOUND IN TEXAS.

TEXAS newspapers report the occurrence of the Guayule rubber plant in the lower counties of that state. It might be mentioned that specimens of this plant (*Parthenium argentatum*) found in Texas were the subject of scientific reports before its discovery in Mexico. Mr. Otto Koehler, president of the National Rubber Co. (San Antonio, Texas), formed to operate a Guayule factory at Torreon, Mexico, says that the Texas plants appear less rich in rubber, but that it may be worth while to work them up if transportation facilities are favorable and if plenty of water is obtainable.

ERNST GILG, in *Notisblatt* of the Berlin botanical gardens (December, 1905), describes a new rubber yielding liane, discovered by Albert Simon in northwest Kamerun, which is designated *Clitandre Simoni*.

JUBILEE OF DR. H. TRAUN & SONS.

THE fiftieth anniversary of the firm of Dr. Heinr. Traun & Söhne, formerly the Harburger Gummi-Kamm-Co., of Hamburg, seems to have been a jubilee feast, in the best sense of the word. Everybody who was in any way connected with the firm was present, and every workman seemed to feel that he was a part of the firm, had a vital interest in

its welfare, and felt that he had a right to be there and to share in the merrymaking and in the beauty of the decorations as fully as the directors. The general spirit was that of a big family reunion. Congratulations and messages of good will poured in from all over the world. The works shut down at noon, and at 6.30 Senator Dr. Traun and his sons, Herr Otto



SENATOR DR. HEINR. TRAUN.

and Dr. Friedrich Traun, received the guests with such cordiality that a spirit of general friendliness was immediately communicated to the whole assembly.

Herr Otto Traun, the elder son, and the one who is generally looked upon as the leading spirit of the firm, since his father became a senator, made the opening address, in the name of the Emperor and the free city of Hamburg. Later on Senator Dr. Heinrich Traun spoke, telling how his father and his associates of the Harburger-Gummi-Kamm Co. had organized the company now owned by Dr. Traun and his sons. Then he acknowledged the company's great indebtedness to the pensioners and veteran workmen of the firm, some of whom had given it their best efforts throughout its whole existence. He also thanked the Hamburg senate and the Prussian government for their fostering care and protection.

The regular responses were made by the mayors of Hamburg, Harburg, the sponsor for the workmen and others, and then all united in a tribute to the aged Seniorchef Herr Senator Dr. Heinrich Traun. In connection with the jubilee the firm advertised:

On the occasion of the semi centennial of our company's existence, we have received so many expressions of good will from every side, that we have found it impossible to answer them all singly. We must therefore take this method of warmly thanking all those who have so kindly expressed an interest in the welfare of our company.

The first hard rubber factory in Germany was established in Harburg in 1856, as the Harburger Gummi-Kamm-Compagnie (Harburg Rubber Comb Co.), in connection with the long established business of H. C. Meyer, Jr., whalebone manufacturers of Hamburg. This firm had relations with

Meyer & Poppenhusen, who had already established, to exploit the patent of Nelson Goodyear, the hard rubber factory at College Point, New York, which is now operated by the American Hard Rubber Co. In 1863 Dr. Heinrich Traun, whose father was a son in law of the original Meyer, entered the business at Harburg and subsequently became sole proprietor. In August, 1902, Dr. Traun admitted to partnership his two sons, when the style of the business was changed to Dr. Heinr. Traun & Söhne, vormalis Harburger Gummi-Kamm-Co. The business has been referred to frequently in THE INDIA RUBBER WORLD, in the pages of which its history is pretty fully recorded.

ANOTHER GUAYULE COMPANY.

THE International Guayule Rubber Co., incorporated last September under New Jersey laws to operate in Mexico, report having acquired 280,000 acres of land in the alkali desert about 120 miles north of San Luis Potosi, at a cost of \$210,000 (silver) and that they will put \$90,000 more into their factory. They will operate a process under their own patent granted in Mexico, by which the gum is extracted wholly by rubbing action in water. Their practical man, who has studied Guayule, reports that shrubs bearing male blossoms give from 20 to 25 per cent of gum, while shrubs bearing female blossoms give from 8 to 12 per cent. They estimate that they have from 25,000 to 45,000 tons of raw material on their lands. Their special machine, by the way, they believe is capable of extracting 3000 tons a year. The officers of the company are J. A. Riley, president; Thomas A. Rider, vice president; and B. St. John Hoyt, secretary and treasurer. The first named are wealthy coal operators in Shenandoah, Pennsylvania, where the real headquarters are at present. They have a temporary office, however, at No. 100 Broadway, New York, with their counsel, W. B. Brice.

The above figures regarding the yield from Guayule appear excessive and do not coincide at all with those received from other sources. From many tons extracted under the most rigid supervision of men desirous of knowing the exact truth, the maximum yield of rubber reported hitherto has been 12 per cent., and this refined, gave 8 per cent of rubber. With regard to "male" and "female" shrubs, there is a shrub called by the natives the female Guayule and also known locally as "mariola." This has been said to contain 6 per cent of rubber, but those who have looked into the matter carefully have so far been unable to extract any gum at all from it.

STILL HUNTING RUBBER IN ARGENTINA.

THE minister of agriculture of Argentina, says the *South American Journal*, clings to the hope that rubber trees are to be found in the Chaco, on the frontier of the province of Salta, where an explorer discovered a few trees which yielded gum. This, however, when analyzed, did not prove to be a marketable commodity, and a commissioner sent by the minister to make further explorations failed to find the real rubber tree. However, the minister, in nowise discouraged, has sent another official naturalist to Salta to make further explorations, but the latter expressed the opinion before starting that his chase was hopeless. [See THE INDIA RUBBER WORLD, August 1, 1905—page 366.]

COLORADO RUBBER OUTDONE.

WE have no pleasure in giving space to any information that may have an unfavorable bearing upon the flourishing rubber industry of Colorado, so widely exploited in the press of that state. But it is the province of a trade paper to reflect as fully as possible the development of its special field, without fear or favor. Hence, if the glories of that Colorado sheep made famous by discovering a new source of rubber should appear dimmed in comparison with the exploits of a transatlantic rubber yielding goat, the editor may feel regret, but facts are facts—at least until disproved. The story of the goat which follows we are indebted for to a leading New York newspaper, whose proprietor is the American ambassador to the Court of St. James's, and it runs:

TO THE EDITOR OF THE TRIBUNE—Sir: Referring to the extremely interesting scientific articles in your paper the last few days about "hens laying eggs with handles," "hens producing cooked ham and eggs," the "dog on wheels" and "the cat with wings" leads us once more to encroach on your valuable space by referring to the press dispatches from Washington regarding a ram just imported, which feeding on a certain weed grown in Colorado, formed in its stomach a huge indigestible ball, which on examination turned out to be a new chemical substance analogous to the best Para rubber.

The department of agriculture, having their attention called to the matter, experimenting with the stuff, produced rubber shoes, toys, etc., and efforts will be made to stimulate this new industry among farmers; but, strange and singular as this discovery is, it does not compare with rubber produced direct from the mountain goat in the Austrian Tyrol, near Innsbruck, where, as is well known, is the largest rubber plant in the world known as the Royal Caoutchouc Factory, near which is a striking group of bald and fissured dolomites, where between the Rumerjoch and Seegrabenpitzen, grows in great profusion what is known locally as goatswort, the botanical name of which is *Dolichos-Asclepius purpureus*, of the genus *Polygala*, which secretes a lactescent fluid much like the sap of the rubber tree, and which, from the most ancient times has been known as the favorite food of the Tyrolese goat.

Tacitus describes how the soldiers of the Roman emperor Vespasian, A. D. 66, discovered that goats' milk when hardened by the heat of the sun becomes elastic like rubber, and blocks of it were sent to Rome and used as springs over the axles of racing chariots (and any one curious in the matter can see one of these ancient chariots in the archaeological department of the Metropolitan Museum of Art this city), but for nearly 2000 years the whole matter seems to have been forgotten until some six months ago Herr von Pumpnickel, president of the Austrian Polytechnic College, had his attention called to it.

He began experimenting with mountain goat's milk in behalf of the rubber factory, and by feeding the animals on pine cones, in conjunction with the goatswort, produced milk impregnated with turpentine, and by solidifying it with heat and feeding it through a Foudrinier machine turned out real rubber sheeting and cloth for garments, and in order to produce vulcanized rubber he forced the goats to drink from a sulphur spring near by, and he was thus enabled to make combs, hairbrushes, syringes, knife handles, etc., by simply running the milk into molds, adding meantime coloring matter required. And this is the reason why the Austrian company furnishes goods so cheaply; and it bids fair to reduce the price of genuine Para rubber to a very few cents a pound.

New-York, March 15, 1906.

FITZ NIGEL.

CELESTINO NIETO and Maximo Parajon have petitioned the Mexican government for a concession to establish a factory for rubber caps for beer bottles.

NEW TRADE PUBLICATIONS.

IN their Engineers' Catalogue the NEW YORK BELTING AND PACKING CO., LIMITED, aptly illustrate their record as "pioneers" and "leaders" in the manufacture of rubber packing by contrasting on one page a picture of the immense covered wagons so much used at the time this company was founded, and one of a modern commercial motor wagon. The catalogue is devoted to descriptions of a wide range of packings, adapted to many special purposes, together with gaskets, valves, diaphragms, hose, belting, and so on, very many of which are decidedly modern and illustrate the constant progress of engineering and mechanical development. [3 3/4" x 6". 48 pages.]

THE MANHATTAN RUBBER MANUFACTURING CO. (Passaic, New Jersey), in their new General Catalogue of Mechanical Rubber Goods, not only illustrate and describe a line of staple and special productions, which appears larger and more varied with each succeeding edition, but is rendered more attractive and interesting by means of a number of well executed illustrations showing such goods in use. For instance, their illustrations of large machinery belts in service; fire, suction, pneumatic, and divers hose likewise appearing in attractive pictures; interiors furnished with mats and tiling; a paper mill with rubber rolls, and so on. In many respects this is the best illustrated catalogue which has yet appeared in this field. [5" x 7 1/4". 47 pages.]

THE CANADIAN RUBBER CO. OF MONTREAL, LIMITED, issued under date of March 12 their regular illustrated price list of "Canadian" Rubbers [3 1/2" x 6". 80 pages].—A special illustrated catalogue relates to the "Royal Canadian Footwear" line, which is a new feature. The manufacturers say: "We couldn't improve the wearing quality of our regular brands of rubbers, so we decided to manufacture a special brand carrying highest grade lines, finest finish—and noted above everything else for style. The price will be a little higher than any other rubber on the market." [6" x 9". 24 pages.]

THE GUTTA PERCHA AND RUBBER MANUFACTURING CO. OF TORONTO, LIMITED, issue under date of March 12 their illustrated catalogue of Rubber Footwear, which as usual is complete and well got up. It is interesting to note that the catalogue includes a line of rubber heels, something which is not yet true of any rubber shoe factory in the United States. [3 1/2" x 5 1/2". 72 pages.]

THE MERCHANTS RUBBER CO., LIMITED (Berlin, Ontario), issued their third annual illustrated catalogue and price list of Rubber Boots and Shoes which includes several novelties of interest in addition to a very varied line of staples. [7" x 6 1/4". 36 pages].—The products of this company are handled by retailers direct, and a handsome calendar distributed to the trade by the company is illustrated with the portraits of forty-five rubber shoe retailers throughout the Dominion, under the heading "The Men You Do Business With."

ALSO RECEIVED.

THE B. F. Goodrich Co., Akron, Ohio.—Wheels of Fortune, [A Catalogue of Bicycle Tires.] 16 pages.

Grand Rapids Felt Boot Co., Grand Rapids, Michigan.—Rubber Boots and Shoes, Felt and Knit Boots. 40 pages.

The Electric Cable Co., Bridgeport, Connecticut.—Voltax [a new non-rubber insulation]. 22 pages.

NEW UNITED STATES RUBBER SHARES.

THERE has been an addition of \$5,000,000 to the amount of First Preferred capital stock of the United States Rubber Co. listed on the New York Stock Exchange. The paragraphs which follow are extracted from the formal statement made by the company in applying for the new listing:

Referring to the application of this company, dated October 5, 1905, application hereby is made for the listing of 50,000 additional shares of its First Preferred stock, of the par value of \$5,000,000.

The United States Rubber Co. was organized under the laws of the state of New Jersey, March 30, 1892. The present authorized capital of the company consists of \$40,000,000 of First Preferred stock, \$10,000,000 Second Preferred stock; and \$25,000,000 Common stock. The par value of each of its shares is \$100.

The Meyer Rubber Co., one of the original subsidiary companies of the United States Rubber Co., for some years has served as holding company for the United States Rubber Co. for various securities which from time to time have been held in connection with the business of the United States Rubber Co.

When it was deemed desirable by the United States Rubber Co. to inaugurate a system of profit sharing, a considerable amount of Preferred and Common stock of the United States Rubber Co. was purchased in the market by the Meyer Rubber Co., which in turn gave to employees of the United States Rubber Co. and of its subsidiary companies options on the stock, as fully explained in the annual report of the president at the stockholders' meeting in May, 1904.

In organizing the General Rubber Co., which, as previously reported to your committee, is a company organized for the purpose of buying and dealing in crude rubber principally for the requirements of the United States Rubber Co. and of its subsidiary companies, the Meyer Rubber Co. subscribed for and purchased all of the capital stock of the General Rubber Co., namely \$3,000,000, paying therefor in cash and borrowing the money from the United States Rubber Co. In due course, the Meyer Rubber Co. sold \$1,000,000 of the stock of the General Rubber Co. to the Rubber Goods Manufacturing Co., receiving in payment therefor \$1,000,000 of the Preferred stock of said Rubber Goods Manufacturing Co.

In view of these, and other like transactions, from time to time carried on and to be carried on by said Meyer Rubber Co. in the interest of the United States Rubber Co., it has been felt desirable that the Meyer Rubber Co. should have a capital considerably larger than \$200,000, the amount heretofore existing. Accordingly, on December 8, 1905, that capital stock was increased from \$200,000 to \$5,000,000.

For such additional capital of \$4,800,000 par value, the United States Rubber Co. subscribed and paid for the same by the issue of 48,000 shares of its own First Preferred stock of the par value of \$4,800,000.

As stated above, the Meyer Rubber Co. received from the Rubber Goods Manufacturing Co. 10,000 shares of the Preferred stock of the Rubber Goods Manufacturing Co. of the par value of \$1,000,000, in payment for \$1,000,000 par value of the capital stock of the General Rubber Co. As it was desirable that all of the stock of the Rubber Goods Manufacturing Co. acquired in the interest of the United States Rubber Co. should be held by the United States Rubber Co. itself, the latter company purchased from the Meyer Rubber Co., and now holds in its treasury, such 10,000 shares of the Preferred stock of the Rubber Goods Manufacturing Co., in consideration thereof having issued to the Meyer Rubber Co. 10,000 shares of the First Preferred stock of the United States Rubber Co.

The Meyer Rubber Co. thus holds in its treasury 58,000 shares of the First Preferred capital stock of the United States Rubber

Co. It is desirable that part of this First Preferred stock be sold and be converted into cash for the benefit of the Meyer Rubber Co., which cash thus will be ultimately available for the corporate purposes of the United States Rubber Co.

Therefore out of these 58,000 shares of First Preferred stock of the United States Rubber Co., the Meyer Rubber Co. has sold 50,000 shares at the price of \$110 per share, or for the aggregated sum of \$5,500,000 cash now in the treasury of the Meyer Rubber Co.

Accordingly, the United States Rubber Co. makes application now for the listing of the last mentioned 50,000 shares of First Preferred stock of the United States Rubber Co.

The total issue of capital of the three classes now stands as follows:

	Issued.	Authorized.
First preferred.....	\$34,440,800	\$40,000,000
Second preferred.....	8,477,300	10,000,000
Common	25,000,000	25,000,000
Total.....	\$67,918,100	\$75,000,000

THE EDITOR'S BOOK TABLE.

THE HOW AND WHY OF ELECTRICITY. A BOOK OF INFORMATION for non-technical readers. By Charles Tripler Child. Second edition. New York: Electrical Review Publishing Co. 1905. [Cloth. 12mo. Pp. 140. Price, \$1.]

THE preface to this book says that its purpose is not to tell what electricity is, "for the writer does not know, but to tell something of its properties, of how it is generated, handled, controlled, and set to work, and to explain how familiar electrical apparatus operates." As will be inferred, the work is for the popular reader, rather than for the electrical engineer; but in these days even the average popular reader is brought so frequently into contact with applications of electricity as to be almost obliged to understand something of its control, and this book is infinitely more informing than almost any single technical work that could be named. Charles Tripler Child had a marvelous faculty for comprehending the facts of science, and, when he had learned them, of telling what he knew, in such a way that men, who had not had the blessings of a thorough education, could understand. These men read Mr. Child's books, and thanked him in their hearts for teaching them, yet sparing them the domineering priggishness of the general run of pedagogues. The kindly author of this book died shortly after it was written; but this second edition preserves the simple language of the original, with certain corrections, illustrations, and additions made to bring it up to date.

IN CURRENT PERIODICALS.

EINE Neue Anzapfungsmethode für *Kickxia elastica*. By Dr. Strunk. [Report on a new method of tapping, in Kamerun, and its favorable results.]—*Die Tropenpflanzer*, Berlin. X-3 (March, 1906). Pp. 141-149.

Les Guis Caoutchoutifères de l'Amérique du Sud. [Resume of a study by Professor Warburg on rubber yielding species of mistletoe.]—*Journal d'Agriculture Tropicale*, Paris. VI-56 (Feb. 28 1906). Pp. 45-47.

Plantes à Latex d'Afrique ne Donnant pas de Caoutchouc. By Aug. Chevalier. [Latexes which do not afford rubber.]—*Journal d'Agriculture Tropicale*, Paris. V-54 (Dec. 31, 1905). Pp. 355-358.

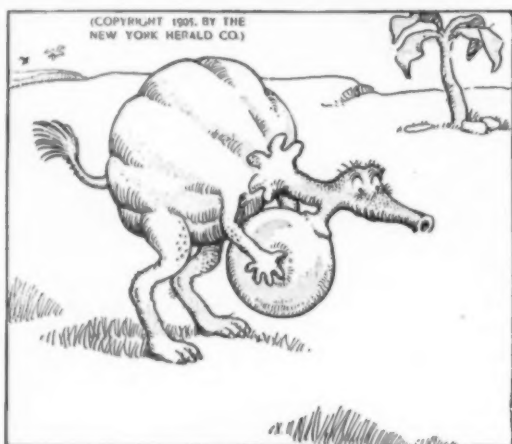
Pará rubber teelt in het schiereiland Malaka.—*De Indische Mercuur*, Amsterdam, XXVIII-11 (March 14, 1905). P. 153.

Report on the Experimental Tapping of Pará Rubber Trees in the Botanical Gardens, Singapore.—*Agricultural Bulletin*, Singapore. IV-11 (Nov. 1905). Pp. 424-443.

THE ORIGINAL ATOMIZER.

SINCE the doctrine of evolution burst upon the world like a thunderclap, causing us all to readjust many ancient theories and preconceived notions, men have recalled the old saw that there is nothing new under the sun, and believe that everything in our high civilization can be explained either through researches in ancient documents and buried cities, or else through some suggestion found in the animal or vegetable kingdoms, adapted or paralleled for the use of man.

Working from this base, the Baltic races have caught hints from all sides, adapting the ideas to their needs. At first they imitate the original form, but gradually slough off unnecessary features, and develop the essential ones. Thus the Vikings built their ships in the shape of the long worm, or sea serpent. The railroad engine is still called the iron



THE TOMATOMIZER.

horse, and tradition and fairy tales are full of allusions to high speed machines made in the shape of horses. The sight of a man on horseback led the Greek to invent the Centaur, which combined the swiftness and strength of the horse with the intelligence and armplay of the man. Most flying machines have imitated the birds more or less closely, and have failed because they imitated the wrong features of the bird instead of the most striking characteristic, which is its power to soar without effort. The modern skyscraper seems to be a mixture of the ideas contained in cliff dwellings, and the giant anthills of the tropics, with the disadvantages of both.

Innumerable other instances will occur to the reader such as "bark" for boat; house, derived from a word meaning hide or skin, and so on. Rubber was long known in France as "nigger-hide," which harks back to the ancient custom of using such skin for various purposes to which rubber is now put, such as waterproofing, which is mentioned by Pliny. A development of one of these suggestions was recently seen in the *New York Herald*; that is, it was recent from the standpoint of the evolutionist. This was a series of pictures illustrating the development of the surgical atomizer, syringe and blub spray from an animal called the Tomatomizer, though the scientific name was not given. It was, in brief, a cross between an animated tomato and an atomizer, and is described as searching desert wastes for

humans, at whom it squirted tomato ketchup. The creature is undoubtedly prehistoric and the druggists sundries' manufacturers that own atomizer patents are not of necessity infringing any ancient protected rights.

A REPORT ON RUBBER TAPPING.

FIRST ANNUAL REPORT ON EXPERIMENTAL TAPPING OF PARA Rubber (*Hevea Brasiliensis*) at the Economic Gardens, Singapore, for the year 1904. By H. N. Ridley, Director of Gardens, and R. Derry, Assistant Superintendent, in Charge of the Experiment. Singapore: Government Printing Office. [8vo Pp. 20.]

THE legislative council of Singapore in 1904 voted \$1200 to cover the cost of experimental tapping of the *Hevea* rubber trees in the local Economic Gardens. The number of trees tapped was 880, and the yield of dry rubber obtained 884½ pounds, for which \$2440 was realized in London. The prices, by the way, were as high as any paid during 1905 for plantation rubber, from Ceylon or elsewhere. All the rubber was prepared in the form of "biscuits," and coagulated with the aid of calcium chloride. In these experiments account was taken of different methods of tapping, the time of day, tapping different groups of trees at different intervals, and various other points, all with a view to arriving at the best practice, rather than determining the greatest possible yield. All trees were carefully measured, with the purpose of arriving at a rule for the yield to be expected for each inch in girth of a tree, at say 3 feet from the ground. These experiments are to be continued, with a comparison of the records of one year with another, and the net result can hardly fail to prove of much practical value.

APAXTLE.—One of the gums which is having the greatest demand, after rubber and chicle, is that one known by the name of Apaxtle, which is extracted from the *arbol rosario* (rose-colored tree), and which is used for the manufacture of rings, smoking pipes, and similar articles.—*Mexican Herald*.



GOLFING ON THE LEGAL LINKS.

RUBBER FACTORY APPLIANCES.

CLOTH WINDER AND MEASURER.

THE machine shown in the cut is designed for winding cotton, silk, or other goods on boards for the market. It is claimed to be one of the most rapid and accurate winding and measuring machines built and is largely used by cotton and gingham mills, bleacheries, printeries, dyeing and



finishing establishments, etc., for almost all classes of goods. It is provided with tension rods by which a any desired amount of tension may be obtained to wind the goods hard or soft, and there are guide collars to aid in guiding the cloth in straight and even, so as to make a neat roll with

square ends. The machine is readily stopped and started by the foot of the operator on the tread bar at the bottom, and the boards on which the goods are wound are quickly clamped and unclamped in the sockets by a hand lever. The hand lever is held in position by a weight, so that any slight variation in the length of the boards may be taken up. The machine may be made either with or without the measuring attachment, as desired. The measuring roll is one yard in circumference, with nickel plated dial on the end to register up to 60 yards. [Curtis & Marble Machine Co., Worcester, Massachusetts.]

MAKING UP STAND FOR MOTOR TIRES.

THE illustration represents something new in the way of a making up stand for the use of manufacturers of automobile

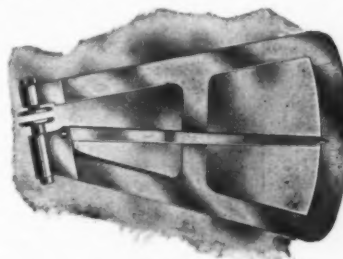


tires. The stand is about 36 inches high, fitted with an iron base, with a projecting arm which is adjustable. This arm carries a spider with four arms, each arm being fitted with an adjusting screw, so that it will fit the making up forms for any size tire, it taking only a minute to change from one size to another. These stands are being used by several tire manufacturers with success. [John E. Thropp's

Sons Co., Trenton, New Jersey.]

TWO NEW GAGES FOR RUBBER WORK.

So great a proportion of the whole amount of rubber used is run into sheet form before making up, that good measuring gages are always in demand. Certain goods call for a certain thickness of gum, and this is so expensive now that care is necessary in order not to run sheets even a shade too thick. The calender men with the old wire gage are not to be trusted too far, and it is best to have a man with a good one constantly testing the thickness of the sheet. The Hoggson & Pettis Co. are well known as manufacturers of rubber men's supplies, so that calender men who do not already know it will be glad to learn that this company is



making two very convenient kinds of gage, different in capacity and cost. The unit of measure on each is the "line," which is $\frac{1}{16}$ or .0025 of an inch. The lower priced gage, which is triangular shaped, has a capacity of $\frac{1}{4}$ inch, being graduated to $\frac{1}{16}$ of a line, or $\frac{1}{128}$ of an inch. The other gage which works by a ratchet and thumb pressure, is graduated to $\frac{1}{4}$ line, or $\frac{1}{64}$ inch, and has a capacity of $\frac{5}{16}$ inch. The triangular form may also be graduated in other ways, if desired. Both are nickel plated, and beautifully made. [The Hoggson & Pettis Manufacturing Co., New Haven, Connecticut.]

CABLE LAYING IN THE PACIFIC.

THE cable steamer *Silvertown* arrived at Manila on March 22, having on board the cable manufactured by the India Rubber, Gutta-Percha, and Telegraph Works, Limited, for the completion of the line of the Commercial Pacific Cable Co. across the Pacific. This line is to connect Manila and Shanghai, and its completion is expected early in this month. The company are laying another cable from Guam to Japan, which will be completed a little later.

The systems which the Commercial Pacific connects in the Far East are the United States government lines in the Philippines, Japanese government lines, Chinese government lines, German Dutch Cable Company, Eastern Extension Telegraph Co., and the Great Northern Telegraph Co.

SOME LOST RUBBER SHOES.—The statistics of the dead letter office [at Washington] are interesting, but particularly so is the fact that about 150 men are kept busy the year round taking care of parcels for which owners cannot be found. A very sizable proportion of these packages have been found to contain rubber footwear; probably about half of them being rubbers which people have forgotten to carry home with them after protracted visits. If the addresses cannot be found, the government returns these, where possible, to the sender, but quite a large amount of the old rubbers are among the packages which are sold at auction, and the proceeds are turned into the treasury.—*Boot and Shoe Recorder*.

THE OBITUARY RECORD.

EUGENE DOHERTY.

EUGENE DOHERTY, who had been engaged in the rubber industry over a half century, died at his home in Brooklyn, New York, on March 14. He was born in Ireland and at an early age was brought by his parents to Boston, Massachusetts, where he found employment in a rubber



works. Later he lived at Newtown, Connecticut, where he was employed in the factory of the New York Belting and Packing Co. He went into business in a small way in Brooklyn in 1865, in the manufacture of rubber for dental uses, under a method of preparation of his own invention. The first location of this business was in Kent avenue,

near North Ninth street. The business grew steadily under his personal management and close attention until, in 1884-85, he built at North Eighth and Kent avenue the large factory in which his business was thereafter carried on. Mr. Doherty was engaged throughout his business career mainly in the manufacture of dental rubbers, and the business will be continued under his name by his widow, his sole survivor and the inheritor of the estate, which includes the home near the factory, which he had occupied for more than a quarter century.

Mr. Doherty was unassuming in character and affable. His charities were numerous though little advertised. He was a liberal contributor to the Roman Catholic church, belonging to the parish of Saint Vincent de Paul, and one of the fine memorial windows of the parish church was his gift. He was a member of the society of St. Vincent de Paul, the Roman Catholic Orphan Asylum Society, and various social organizations. He was a director of the North Side Bank of Brooklyn. In politics he was a Democrat, but was never a candidate for office, though at one time he was talked of for the office of mayor of Brooklyn.

Funeral services were held at the late home of Mr. Doherty on Saturday morning, March 17, followed by a solemn requiem mass at church, celebrated by the Rev. Father Carroll, and the interment was in Calvary cemetery.

* * *

THE rubber town of Bristol was saddened by the sudden death, on Sunday morning, March 4, of NATHAN WARREN McCARTY, son of Terrence McCarty. He was supposed to be in his usual health and was preparing for church when he became unconscious and soon expired, the trouble being an unsuspected abscess in the head. He was born in Bristol August 16, 1883, attended the public schools, and later was gradu-

ated from a private school in that town. After leaving school he assisted his father in the Byfield Rubber Co. When the Consumers' Rubber Co. was organized, with his father as president, he became secretary and general manager, a position which he filled to the day of his death. He had many friends and had shown much business ability.

A ST. LOUIS FAIR SOUVENIR.

THE medal, here illustrated, was given to the Editor of THE INDIA RUBBER WORLD in recognition of his services to the Louisiana Purchase Exposition, and in behalf of industrial progress generally. On the medal the dolphins, pictured on one side, represent the two seas, with the American eagle spreading his wings over all. Of the two figures on the other side, the taller represents Columbia, while the



other is the young Louisiana, throwing off her French raiment to receive the cloak of statehood. The design is by Adolph A. Weinman and was approved by the eminent artists J. Q. A. Ward, Daniel C. French, and Augustus St. Gaudens.

The Editor of THE INDIA RUBBER WORLD was secretary and acting chairman of Jury 11, which was made up of ex-



perts from all of the great manufacturing countries of the world, and had for its work the examination of some 400 exhibits under three groups, namely: Articles for Traveling and Camping; India-Rubber and Gutta-percha Industries; Toys; Leather, Boots and Shoes, Furs and Skins, Fur Clothing, etc.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

I WAS talking the other day to a planter who has had a good deal of tropical experience and he was very eloquent on the potentialities of rubber culture. In his opinion the state of affairs as far as Brazil is concerned is analogous to what history has to tell us with regard to

CULTIVATED
RUBBER.

cinchona. Time was when the wild Peruvian product was the main source of supply; now it all comes from cultivated sources in other lands and the price has dropped very considerably. He predicts that the cost of collecting Pará rubber in South America is bound to continually increase, as the workable forests become more remote from the trading centers, especially as the available acclimatized labor show no signs of any inordinate increase. The present high price allows of a sufficient margin of profit to allow of equipping the collecting bands, but should the price show any considerable fall and the cost of collecting remain stationary, the necessary consequence will be a cessation of the industry. Of course my informant does not expect this to happen in a year or two, but he is emphatic that it will come about when the various plantation companies begin to harvest on a large scale. Analogy is always a risky form of argument, but there is certainly a good deal of similitude between the cases of cinchona and rubber. Naturally the shareholders in the rubber companies do not wish overproduction to bring down the price too much, but in the majority of prospectuses it is noticeable that stress is laid on the cost of production being less than 1s. 6d. per pound, a figure which will allow of profitable working even should the present price of fine rubber fall 50 per cent.—that is of course presuming that nothing catastrophic happens to the plantation.

WITH regard to the Liberian Rubber Corporation, which has attracted a good deal of attention owing to the well

LIBERIAN
RUBBER.

known public men on its directorate, it is noticeable that the optimistic speech made by Sir Harry Johnston at the recent statutory meeting of the shareholders made little impression on the market, the shares being at a discount the day after the meeting. Probably the rubber investing public had heard so much about the price of rubber being 5s. 6d. per pound in connection with the various Ceylon and Straits flotations that they did not grasp the fact that the Liberian rubber fetches less than half this price in the market. Questions on the point were asked at the meeting and 2s. 8½d. was given by Sir Harry as the average price for their rubber during 1905. The important matter for consideration is how low can this price be allowed to fall so as still to leave the company a sufficient margin of profit to pay interest on its large capital. At the present price or thereabouts things will no doubt go on all right, but it seems that the future is very uncertain. If the Pará rubber plantations tend to bring down the price of fine rubber, native Africans will fall in sympathy. Certainly the Liberian Corporation do not propose to depend entirely on their rubber forests, as they have in view the planting of Pará trees and also the development of the latent mineral wealth of the country, about which hardly anything is known. Still the concern does not seem one that an impe-

cunious investor should rush into all things considered. I might mention that the estimated profit on one ton of Liberian rubber was given in the prospectus by Mr. I. F. Braham at £126, so that a fall in price of 1s. 2d. would have to be experienced before loss occurred—supposing of course that the estimate is at all exact.==To say a word about one other company scheme which was offered to the public recently, the Putupaula (Ceylon) Rubber Estates, Limited, the appeal to the public did not meet with a sufficient response and it is to be brought out again in an altered form.

To one like myself, who knows of the large American rubber reclaiming works only by repute, it is a revelation to see the scale on which things are conducted at the rubber reclaiming works at

NORTHWESTERN
RUBBER CO.
LIMITED.

Litherland, near Liverpool. In addition to being on the bank of the Liverpool and Leeds canal, there is railway communication right into the works, an advantage which I think I am correct in saying is not possessed by any other British rubber works. Some of the machinery is of American and some of British make. Steam for the engines and the devulcanizing pans is obtained from four Stirling watertube boilers, which it is easy to understand prove more economical working than the Lancashire type. The reclaiming process used is what is known as the alkali method as patented by Mr. Arthur H. Marks. Briefly described, the process consists of heating the finely ground rubber for a certain length of time with a solution of caustic soda under a high steam pressure, whereby the bulk of the sulphur goes into solution. The devulcanized rubber is then sheeted without the addition of oil, which is a regular constituent of the reclaimed rubber made by the older processes. No doubt the absence of oil goes a long way to explain the great tensile strength of the best grades of the Northwestern Co.'s goods, after making all allowance for the use of good quality scrap. I will be quite superfluous to mention that Mr. Ernest E. Buckleton is the general manager, as his personality is so well known to rubber manufacturers both in Europe and America. The thing which most struck me when I saw the magnitude of the works and heard that they were kept going night and day, and often on seven days in the week, was how can they manage to get enough raw material. In answer to a query I was told that on first starting, considerable difficulty had been experienced, owing to the fact that the organized methods of collecting and classifying scrap rubber so long established in America were practically non-existent in England. The factory soon got to work and created a demand for its products, but it was often a case, to use a gold mining simile, of the mill getting ahead of the mine. This somewhat serious difficulty has now been got over, a large amount of business both in scrap and reclaimed rubber being done with the Continent. In fact, though established at Liverpool the works must be looked upon as a European branch of American enterprise, the present site no doubt having been selected for good reasons. Seeing how strenuously those who are responsible for drawing up specifications for rubber goods insist on the entire absence of reclaimed rubber, the man in the street would think that such

material was injurious in itself, or at any rate no better than oil substitute—that is if he has ever heard of the latter. But really when one hears of goods such as cycle tires being made wholly from reclaimed rubber—and what is more, showing great lasting power—it suggests itself as highly desirable that in the light of recent technical progress fresh stock should be taken of the situation. Perhaps if the merits of modern reclaimed rubber were carefully inquired into, an intelligent jury would return a verdict to the effect that the stigma supposed in certain high quarters to attach to this product was the outcome of fancy or prejudice and that it was not based on any solid foundation of fact. Of course I am not suggesting for one moment that reclaimed rubber can be equal to new rubber, but judging by American practice and its results there seems little reason why the British rubber manufacturer should continue to maintain the attitude of reserve which has so long characterized him with regard to reclaimed rubber.

It may be mentioned that the arrangement which existed for some time between the Seddon Tyre Co. and Messrs.

THE SEDDON TYRE CO.

David Moseley & Sons, Limited, whereby the tires were manufactured solely by the latter firm, has been terminated, Messrs. Moseley having now nothing to do with the manufacture of the tire. The Seddon company now have their own works in Ellesmere street, Hulme, Manchester. Their red rubber single tube motor tire is pretty well known and they are now pushing their non-skidding tread, which, though of the usual leather and metal stud type, is stated to be attached to the rubber tire by an entirely new process in which vulcanization plays no part. Patents have been applied for.

THE *India-Rubber Journal* recently made some strictures upon the low quality rubber that has come to be used in these goods, owing presumably to the stress of competition. The facts of course are indisputable when one can see them in shop windows marked at 3 pence per pair. It is a question, however, whether the actual manufacturer is so much to blame. A great bulk of these heels are made under registered names for middlemen who put them on the market and it is a safe surmise that the middlemen strike a hard bargain with the manufacturer as to the cost. Some manufacturers no doubt will refuse to supply rubbish at rubbish prices, but we have it clearly indicated in the annals of the rise and fall of other rubber goods that there will always be some who will work to the customers' ideas of price. Decline in quality has its inevitable consequent in a decline in popularity, and the note of warning issued by our contemporary is by no means unjustifiable. Of course it must not be overlooked that while many people pay £2 for a pair of boots, a larger number don't give more than a quarter of this sum, and so perhaps it is only in the fitness of things that rubber heels should be on sale at widely different prices. I don't say that the cases are parallel because I dare not suggest that cheap boots are made of brown paper, in view of the result of a recent libel action. It is safe, however, to say that there is such a thing as low-class leather and the purchasers of it may possibly be satisfied with rubber heels of corresponding quality. To conclude, as these heels are largely sold in the West End as well as the East, to use a London expression, it behooves those who do the better class trade to see that for the sake of snatching a small extra profit they do not follow the lead of the small

RUBBER HEELS.

dealer. Since writing the above I have had an opportunity of discussing this matter with an authority on the business done by the Wood-Milne Co., who are the largest producers of these goods, and I was told that there is no decrease in the demand for this firm's special quality pad.

POPULAR attention has been directed of late years so much to the development of the motor tire that the solid cab tire has been somewhat put into the shade. Still one hears on all sides that the business has increased. Perhaps the greatest novelty to the eye at all events is the white cab tire recently put on the market by Messrs. Moseley & Sons. Its appearance at once distinguishes it from all competitive tires, though whether it has any special merits I am not in a position to say. On the firm's stand at the recent Manchester motor show it looked spruce enough, but how long will its color withstand the black mud of our English manufacturing towns?—The whilom Wedge Tyre Co. of Soho Works, Ancoats, Manchester, is now replaced by a company to be known as the Dook-Swain Tyre Co. The latter name will be familiar to many in the trade in connection with the Swain Tyre Co., of Harwich. I understand that in addition to taking over the business of the late Wedge Tyre Co. the new company are enlarging the works and will deal in tires of all kinds.—I may mention as of possible interest to some one over the water that as regards compounding, tensile strength, and general suitability for its required uses the Kelly solid tire has been referred to in my presence as being ideal, the excellence of which it is the object of competitors to attain to.

ASBESTOS, as is well known, enters largely into engine packings, both alone and in conjunction with rubber. In hardly any case do the rubber manufacturers prepare their own asbestos from the raw material, but buy it in the woven

ASBESTOS WEAVING IN ENGLAND.

state from firms who make its preparation a specialty. The amount of business passing between the asbestos manufacture and the rubber works in Great Britain appears to find no reflection in America, where I understand this branch of trade has been neglected by the rubber companies. The largest firm of asbestos manufacturers in Great Britain is that of Messrs. Turner Brothers, Limited, of Spotland Mills, Rochdale. They buy the raw material direct from the Canadian mines, and put it through the various processes incidental to spinning and weaving. They are large manufacturers of finished asbestos goods, such as proofed sheeting, cloth packing, etc., besides supplying yarn and cloth to the numerous packing manufacturers and rubber companies. They have long held an important position as contractors for asbestos goods to the Admiralty and other government departments. Rubber machinery has recently been installed in their works and this in enabling them to do their own proofing puts them in a unique position for turning out goods consisting of rubber and asbestos, such as sheeting, packing, tape, rings, and the like. I am not an expert on the asbestos manufacture, but have every reason to suppose that the claim of Messrs. Turner of having the most up to date asbestos factory in existence by reason of having re-equipped the works with the latest labor saving machinery, is not at all an exaggeration. The firm have recently extended their premises with the view of making Balata driving belting, which branch they anticipate will shortly become one of the most important of their business.

THE RUBBER TRADE IN EUROPE.

HASKELL GOLF BALL CASE IN ENGLAND.

IN a decision of the British Court of Appeal on March 7, concurred in by the full bench then sitting, the adverse finding of the lower court is sustained in the case of the Haskell Golf Ball Co. v. Hutchinson & Main for alleged infringement on the plaintiff's patent covering the manufacture of golf balls. The court bases its finding upon the testimony of a Captain Douglas Stewart, who made and sold golf balls almost identical with those of the Haskell company as early as 1871 or 1872, and that of one Mr. Fernie who offered similar evidence. The trial in the first instance was before Mr. Justice Buckley, in the High Court of Justice, chancery division, in London, beginning May 29, 1905.

DUNLOP REORGANIZATION.

AN extraordinary general meeting of the Dunlop Pneumatic Tyre Co., Limited, was called for March 14 for the purpose of considering resolutions providing for the reduction of the capital of the company, by scaling down the par value of the ordinary and deferred shares, to the end that the capital shall more nearly represent the present value of the assets. At present "good will" figures largely in the list of assets, but since the expiration of the patents upon which the company was formed originally and the conversion of the company into a manufacturing enterprise, it is agreed by all interested that a reorganization is desirable, though it has not been easy to formulate a scheme on which all classes of shareholders could agree. The readjustment of classes of capital suggested by the directors is indicated by the table:

	Present.	Proposed.
Preference.....	£1,000,000	£1,000,000
Ordinary.....	1,000,000	625,000
Deferred.....	2,000,000	500,000
Total.....	£4,000,000	£2,125,000

The new plan was adopted by a decisive vote.

RUBBER FOOTWEAR TRADE IN GERMANY.

THE rubber shoe trade has been quite a sufferer this winter [says *Gummi-Zeitung*, February 23]. Very few points report a lively business in this line. The reason is found in the lack of snow, and in the generally mild winter. Though rubbers are more generally worn in rainy weather than formerly, still it is snowy weather that calls for their greatest use. Thus it happens that all dealers are overstocked. In other countries we hear the same complaints from rubber shoe men. In the United States, especially, the minimum sale has been reached, owing to the unusually mild winter. - - - Owing to the weak trade, and the higher tariffs in some other countries, many consignments of rubber shoes will be sent into Germany from abroad.

GREAT BRITAIN.

ST. HELENS Cable and Rubber Co., Limited, was registered February 28, with £10,000 [= \$48,665] capital, to acquire the business of the St. Helens Cable Co., Limited; to adopt agreements with Callender's Cable and Construction Co., British Insulated and Helsby Cables, and Siemens Brothers & Co.; and to carry on the business of cable makers, rubber manufacturers, and a general electrical business. The first directors are T. O. Callender, J. Taylor, and G. von Chauvin, respectively directors in the three cable companies named above. Registered offices, Warrington, England.

=W. T. Henley's Telegraph Works Co., Limited, at their annual meeting (London, March 1) reported a net trading profit of last year £40,187 [= \$195,570] against £38,263 for 1904, and £36,742 in the year preceding. The dividend on the ordinary shares remains at 15 per cent. To meet the growing requirements of the business £300,000 new debenture stock has been created; of this £150,000 has been issued and the former debenture stock has been redeemed. The construction of the new Gravesend works has been completed and manufacturing there will be begun shortly.

=THE INDIA RUBBER WORLD is advised on authority that it was in error last month in stating that Mr. J. M. F. Fuller, lately reelected to parliament in the western district of Wiltshire, "is financially interested in The Avon India Rubber Co., Limited." He is, however, a brother of Mr. R. F. Fuller, manager of the company.

=Mr. J. M. MacLulich, general manager of the Sirdar Rubber Co., Limited (London), in order to complete the installation of machinery in their new factory at a given date, recently secured the sole services of Francis Shaw & Co., the well known rubber machinery engineers, with the proviso that for 18 weeks no other contract for machinery should be taken, the machinery to be in place in the new factory at a fixed date, under penalty.

=The directors of Callender's Cable and Construction Co., Limited (London), are understood to have under consideration the idea of establishing branch works in Germany, to offset the loss of continental trade, owing to the prohibitive tariffs of protective countries.

=The mayor and mayoress of Salford (Alderman Isidor Frankenburg and Mrs. Frankenburg) held recently a series of brilliant receptions in the Royal Museum, Peel Park. The first was to the members of public bodies, public officials, and prominent people of Salford and surrounding districts; the second chiefly to the teachers of Salford; and the third to the employés of Isidor Frankenburg & Co., Limited.

=The St. Helens Cable Co., Limited (Warrington, England), advise that their Scottish business has been concentrated in one branch—191, Howard street, Glasgow. The cable department remains under the management of A. Cowie, and Robert Sinclair has taken charge of the tire and mechanical goods departments.

GERMANY.

THE Munich firm Aktiengesellschaft Metzeler & Co. closed the year 1905 with earnings of 254,746 marks, including the amount carried over from the preceding year, against 270,723 marks for 1904. The directors on March 20 declared a dividend of 5 per cent. In view of the encouraging growth of the business, the capital stock will be increased about 800,000 marks, the present figure being 1,600,000.

=THE Gelnhausen factory of the Vereinigte Berlin-Frankfurter Gummiwaren-Fabriken lately turned out several sections of suction hose for the Krupp iron works, which they claim are the largest that have yet been made. An examination of the photograph of the products, which has reached the INDIA RUBBER WORLD, seem to substantiate their statement.

=A correspondent of THE INDIA RUBBER WORLD writes from Plauen in Vogtland: "I found out that in this town of 106,000 souls there is not an American rubber shoe to be had. How is that for high? I informed our consul here of the lack of rubbers and he is writing about it to Washington."

GERMAN SUBMARINE CABLE ENTERPRISE.

[FROM "THE ELECTRICAL REVIEW," LONDON, FEBRUARY 23.]

THE article which we publish elsewhere on the above subject should, we venture to think, be read with interest, and possibly advantage, by any Englishman who considers that submarine telegraph is a field in which British manufacturers and engineers have a monopoly which can be comfortably relied on as a permanency. As happened in the case of Italy and France, the need for submarine cables led to the establishment of a German factory and to the building of German ships, with a result, at least in this case, which must be admitted as most creditable to all connected with the undertaking.

There has never been any need up to now [for Great Britain] to fear foreign competition in the manufacture of submarine cables, and all the British manufacturer has asked has been a fair field and no favor. But this latest German enterprise suggests at least that we should be on the *qui vive* lest, thanks to many advantages they possess, and to the support which is given them by their government, our neighbors succeed in stealing a march on us.

There appears to be every reason why cables should be as cheaply manufactured in Germany as in England. Iron or steel wire, which is the chief item in most cables, at least as regards weight, is mostly manufactured in Germany, and, indeed a large proportion of that used in the construction of English cables is supplied by the very firm mentioned as having started the Norddeutsche Seekabelwerke. Copper wire is cheaper in Germany than in England, Gutta-percha and India-rubber are as much in the hands of German merchants as any others, and the other minor component parts are hardly worth considering.

As everyone knows, the Thames, on whose banks are the works of all the English companies, is a very unfavorable locality, and these companies are heavily handicapped by an amount of taxation which is imposed nowhere else, and which is well nigh insupportable. At the last general meeting of the oldest cable manufacturing company the chairman stated that a saving of £25,000 a year in taxation would result if their works were moved to the Tyne, and at the same time pointed out that this amount, if capitalized, would suffice for the erection and equipment of works of the best modern design in a more favorable neighborhood.

Added to the difficulty as regards taxation, there is another which is intimately connected with it, namely, the high rate of wages and the poor quality of much of the labor obtainable. Germany is not a cheap place, take it all round, but wages are lower and the class of labor better. A friend of ours who spent nearly a year on the German telegraph steamer *Stephan* told us that during that time he never saw any member of the ship's crew the worse for liquor, either on board or on shore. That is a great deal to be able to say, and even if the English sailor may be a smarter man and generally more experienced, most shipmasters, if they studied their own convenience, would prefer the German.

There is just a suspicion in our minds that some of our manufacturers may be taking things too easily and failing to keep themselves thoroughly up to the times in regard to both machinery and ships. One hears of electric motors driving all the cable machines at Nordenham, of X-ray

apparatus for examining core and joints, of electric welding for the sheathing wires and so on, and one cannot help being struck with the difference between such modern methods and the equipment of some of our cable factories. In ships, too, the difference is still more marked. Compare the *Stephan*, with several of ours which, despite the admirable work they accomplish, can hardly be said to be of the highest efficiency.

All such modern features are, of course, to be expected with a company which has just made a start, and has had the sense carefully to adopt the best of everything, no matter of what nationality, but surely experience should have taught us the importance of not running any danger of being left behind.

Some years ago Sheffield and Birmingham felt German competition very seriously, because they were slow to wake up to the fact that improved machinery was constantly required. Now they not only hold their own, but can successfully compete against the cheapest German manufactures. The penny scissors which are just now to be bought in many stationers' shops are a good illustration; they are not made in Germany, but in Birmingham. This, of course, has little bearing on the matter, and has not much to do with submarine cables, in the manufacture of which great care and skill are required; but with the facts we have mentioned, and with the recent feat accomplished by Germany—that of making and laying over 6000 miles of submarine cable without a fault, and almost without a hitch—we think we are justified in giving the matter considerable prominence, and in sounding, not the "alarm," but the "reveille!"

[THE manufacture of submarine cables in Germany has assumed important proportions since the firm of Felten & Guillaume (Mülheim a/R), in 1899, founded the Norddeutsche Seekabelwerke Aktiengesellschaft, with works at Nordenham. In addition to numerous smaller undertakings, the German works have made and successfully laid a transatlantic cable, and the German-Dutch cables in the Far East, now aggregating nearly 4000 miles, and important new undertakings are in prospect.]

INTEREST IN CEARA RUBBER IN INDIA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I would be very greatly obliged if any of your readers would kindly give me information upon the following points connected with the tapping of Ceará rubber (*Manihot Glaziovii*).

In all cases where I have tapped this variety the tree has died.

My method has been doubtless crude and has been by stabbing the tree closely all over, piercing the cambium and wounding the young wood.

Would any of your readers who have had actual experience in the tapping of Ceará, kindly say whether this dying of the trees is attributable to my method of tapping, or whether it is a necessary result of tapping Ceará at all?

I would also ask whether the stripping of the rough outer bark at any period of the year causes injury to the tree, and what the best method of tapping is?

How long does it take for the bark to renew itself?

Shimoga, Mysore, India, February 3, 1906.

CEARA.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED FEBRUARY 6, 1906.

- N**O. 811,546 Punching bag. P. J. Conroy, New York city.
 811,619. Horseshoe. F. N. Cline, Chicago.
 811,622. Air cushion for vehicles [having inside a spring adapted to support the vehicle when the pressure of air is diminished in the cushion]. M. Downer, Chicago.
 811,686. Hose rack. [Described in THE INDIA RUBBER WORLD, March 1, 1906—page 199.] W. D. Allen and C. F. Bowes, assignor to W. D. Allen Mfg. Co., all of Chicago.
 811,732. Armor for pneumatic tires. A. A. Moore, assignor of one-half to F. H. Bessenger, both of Detroit, Mich.
 811,793. Method of making waterproof welts. J. R. Reynolds, assignors to the Waterpro of Welt and Filler Co., both of Hartford, Conn.
 811,836. Electrical hose signaling apparatus [for use in connection with fire hose] W. Fowler, Colorado Springs, Colo.
 811,936. Apparatus for applying tires to wheels. A. R. Le Moon, assignor to Nelson & Le Moon, both of Chicago.
 812,020. Embalming catheter. H. M. Crippen, Ballston Spa, assignor to The Max Huncke Chemical Co., Brooklyn, N. Y.
 812,144. Dumb bell [having a hand portion consisting of an air tight receptacle made of practically indestructible flexible material and an inflating and deflating tube.] A. W. Mackenzie and J. Ross, assignors of one-third to J. Gill, all of Edinburgh, Scotland.
 812,165. Tire. [Solid, with retaining wire and flanged retaining plate.] J. L. Connable, Chattanooga, Tenn., executrix of said J. L. Connable, deceased, assignor of one-half to F. L. Connable, Wilmington, Del.

Trade Marks.

- 1,166. Flexible waterproof fabric for use as roofing, damp courses, and other purposes. The Standard Paint Co., New York city. *Essential feature.*—The word RUBEROID.
 7,453. Rubber boots, shoes, and sandals. Bentley & Olmsted, Des Moines, Iowa. *Essential feature.*—Two diamond-shaped figures, one inclosing the other, the inner diamond inclosing two stars and the words BLUE LABEL LINE.
 11,328. Insulated wire and insulated wire cables. Phillips Insulated Wire Co., Pawtucket, R. I. *Essential feature.*—The representation of a globe encircled by two coils of cable between which appears the word IDEAL.
 11,329. Insulating conducting wires for telegraphs, telephones, electric lights, etc. *Same.* *Essential feature.*—The letters O K. on a black disk surrounded by concentric circles.
 13,506. Automobile horns. Gabriel Horn Mfg. Co., Cleveland, Ohio. *Essential feature.*—The word GABRIEL.

ISSUED FEBRUARY 13, 1906.

- 812,259. Tire protector. J. E. Caps, Kansas City, Mo.
 812,321. Vehicle tire. [Solid, with side retaining wires, and stiffening members embedded in the tire.] H. R. Auld, Boston.
 812,373. Pneumatic tire protector. [A series of curved metallic protecting pieces.] L. L. Sidwell, Rivera, Cal.
 812,384. Reinforcing fabric for innersoles. [Involves the use of resinous Gutta-percha. A. Thoma, Cambridge, Mass., assignor to Commonwealth Trust Co., trustee, Buffalo, N. Y.
 812,427. Wheel tire for automobiles. [Rubber and metallic springs combined.] H. Kerngood, Baltimore, Md., and Harry A. Taylor, New York city.
 812,484. Rubber shoe sole and heel. F. C. Connor, Waco, Tex.
 812,496. Resilient heel and sole. [Involves the use of sponge rubber.] H. E. Irwin, Galesburg, Ill.
 812,532. Automatic air pipe coupling. [For railway use.] P. Settino and P. Hoover, Steelton, Pa.
 812,605. Rubber tire guard. [A network of alternating cruciform links and ring like links.] L. Slama, Humboldt, Neb.
 812,647. Reservoir pen. R. T. Gillespie, Lisbon, Ohio.
 812,698. Elastic tire for vehicle wheels. T. Sterne, Paris, France.
 812,706. Respirator. J. Warbasse, Newton, N. J.

Reissue.

- 12,450. Rim for rubber tired wheels. O. L. Pickard, Toledo, Ohio. [Original No. 771,445, issued Oct. 4, 1904.]

Trade Marks.

- 3,176. Fountain pens. The Century Pen Co., Whitewater, Wis. *Essential feature.*—The words THE CENTURY PEN inclosed in a circle with rays radiating therefrom.
 15,290. Rubber hose. Mulconroy Co., Inc., Philadelphia. *Essential feature.*—The word DYNAMITE.
 15,291. Rubber hose. *Same.* *Essential feature.*—The word PORTAL.

ISSUED FEBRUARY 20, 1906.

- 812,842. Milking apparatus. E. E. Good, Waterloo, Iowa, assignor to The Sanitary Cow Milking Co., Minneapolis, Minn.
 812,855. Milking machine. F. Ljungstrom, assignor to Aktiebolaget Separator, both of Stockholm, Sweden.
 812,893. Wheel tire. [Two or more parallel solid tires.] E. F. Sobers, Bethlehem, Pa.
 812,921. Baseball glove. [Comprising an inflatable cushion.] E. H. Decker, Keokuk, Iowa, assignor of one-half to J. Stitley, Joliet, Ill.
 813,254. Spray. [For applying insecticides to plants.] J. M. Sweeney, assignor of one-third each to F. M. Schwartz, Anaconda, Mont., and Hugh H. Sweeney, Seattle, Wash.
 813,256. Pipette. Shin-Ichi Takaki, New York city.
 813,344. Inhaler. C. S. Birt, Birmingham, England, assignor, by mesne assignments, to E. DeTrey & Sons, of Pennsylvania.
 813,359. Hose coupling. E. J. W. DeForrest and F. I. DeForrest, Bradner, Ohio.

Trade Marks.

- 1,855. Leather and rubber cement. Eclipse Cement Packing Co., Philadelphia. *Essential feature.*—The words BULL DOG, and the representation of a bull dog in recumbent position.
 5,155. Rubber combs. American Hard Rubber Co., New York city. *Essential feature.*—The word PRINCESS.
 5,156. Rubber combs. *Same.* *Essential feature.*—The word RENAISSANCE.
 5,157. Rubber combs. *Same.* *Essential feature.*—The word IMPERIAL.
 9,006. India-rubber bags and pouches. Continental Caoutchouc Co., New York city. *Essential feature.*—The word CONTINENTAL.
 10,675. Combs. Dr. Heine, Traun & Söhne, Hamburg, Germany. *Essential feature.*—The word NEPTUNE.
 13,891. Flexible gas-tubing. New York Gas Tubing Co. *Essential feature.*—The word STATITE.

ISSUED FEBRUARY 27, 1906.

- 813,431. Diving apparatus. T. Iwanami & M. R. Woodward, Washington, D. C.
 813,529. Tire [for emergency use]. R. G. Smith, assignor of one-half to Auto-Car Equipment Co., both of Buffalo, N. Y.
 813,534. Fountain pen. G. Sweetser, Upper Norwood, England, assignor to T. De La Rue & Co., Ltd., London, England.
 813,676. Vehicle tire. [Solid, with side retaining wires.] G. M. Stadelman, Akron, Ohio.
 813,731. Aerating device for mattresses. J. Murmans, Cleveland, Ohio.
 813,769. Tuning instrument [for pianos]. N. Bryant, Battle Creek, Mich.
 813,792. Hose coupling. S. W. Gooch, Bridgeport, Ohio, and W. C. Leasure, Wheeling, W. Va.
 813,894. Nursery bottle. B. Holliday, Richmond, Va.
 813,900. Protecting device for pneumatic tires. E. Lapisse, Elbeuf, France.
 813,934. Protective cover for pneumatic tires. J. Albers, Aachen, Germany.

Trade Marks.

- 1,620. Rubber boots and shoes. Lambertville Rubber Co., Lambertville, N. J. *Essential feature.*—The word SNAG-PROOF in quotation marks, associated with a representation of a rubber boot and a pair of rubber shoes.
 2,401. Cotton rubber lined hose. Eureka Fire Hose Co., Jersey City, N. J. *Essential feature.*—The word PIONEER.
 2,408. Cotton rubber-lined hose. *Same.* *Essential feature.*—The word VULCAN.
 5,154. Rubber combs. American Hard Rubber Co., New York city. *Essential feature.*—The word ATLANTIC.
 5,158. Rubber combs. *Same.* *Essential feature.*—The word COMET, and the representation of a comet.

- 5,160. Hard rubber syringes. *Same. Essential feature.*—The word symbol EUREKA.
- 5,163. Hard rubber combs. *Same. Essential feature.*—The word symbol HERCULES.
- 11,010. India rubber bags and pouches. Continental Caoutchouc Co., New York city. *Essential feature.*—The representation of a prancing horse upon uneven ground at the center of concentric circles between which appear the characters C. C. & G. P. CO. H
- 16,306. India-rubber binding. Knapp Rubber Binding Co., New York city. *Essential feature.*—The words KNAPP RUBBER BINDING CO.
- 16,307. India-rubber binding. *Same. Essential feature.*—The representation of a frame upon the upper cross-bars of which is supported a piece of rubber binding and between said cross-bars of which is secured a piece of matting; the words BIND THE RAGGED EDGE and the words KNAPP RUBBER BINDING CO., N. Y.
- 16,498. India-rubber stair-nosings. *Same. Essential feature.*—The representation of a flight of three steps the treads of which are protected by coverings and the edges of the treads of which are protected by nosings; the word ANTISLIPPIN and the words KNAPP RUBBER BINDING CO., N. Y. the whole inclosed within a square border.
- 16,499. India-rubber stair-nosings. *Same. Essential feature.*—The representation of two flights of steps in a common landing, starting toward which upon the lowermost step of one flight is shown a man and leaving which on the lowermost step of the other flight is shown a woman; and the words KNAPP RUBBER BINDING CO., N. Y. Upon the side of the steps is shown a piece of nosing upon which appears the word ANTISLIPPIN.
- 16,513. Elastic tubing adapted for use as hose or packing. New Jersey Car Spring and Rubber Co., Jersey City. *Essential feature.*—The word GIBALTAR.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1904.

* Denotes Patents for American Inventions.

[ABSTRACTED IN THE OFFICIAL JOURNAL, FEBRUARY 7, 1906.]

- 22,147 (1904). Handle of cricket bat [with strips of rubber let in to the surface]. H. O. Clarke and J. W. Weeks, Maidstone, Kent.
- 20,203 (1904). Pneumatic tire. [Conical studs arranged around the tread in rows; the shanks of the studs pass through recesses in an annular holder and bear against a rubber cushion.] J. F. Johnson, Leicester.
- 22,332 (1904). Tennis ball. P. E. Droop, Chemnitz, Germany.
- 22,343 (1904). Elastic tire [constructed of detachable sections]. H. J. Haddan, London.
- 22,392 (1904). Pneumatic tire. [Outer covers with beaded edges and with retaining wires are secured to channel shaped rims having one edge removable by a wedge shaped ring.] W. A. Sankey, Sutton, Surrey.
- 22,543 (1904). Rim. [To facilitate the removal of tires the metal rim is formed with a removable portion.] H. W. Cave, London.
- 22,549 (1904). Means for attaching non slipping covers to tires. H. J. Haddan, London.
- [ABSTRACTED IN THE OFFICIAL JOURNAL, FEBRUARY 14, 1906.]
- 22,693 (1904). Horse shoe tread. H. Coop and Coop & Sons, Lancashire.
- 22,774 (1904). Waterproofing boots and shoes. [A solution of Gutta-percha in carbon bisulphide is used.] L. H. V. Smith (trading as W. H. Smith & Co.,) Birmingham.
- 22,788 (1904). Fountain pen. T. M. Tripp, H. Jackson, and W. B. Jackson, all of Liverpool.
- 22,796 (1904). Exercising apparatus [consisting of elastic cords]. F. W. Croucher, Fleet, Hampshire.
- 22,802 (1904). Advertising balloons. C. A. Barrett, London.
- 22,890 (1904). Means for securing rubber pads to boots. J. Klumpp, Strassburg, Germany.
- 22,894 (1904). Pneumatic tire. F. G. McKim and J. M. Leonard, both of London.

- 22,973 (1904). Elastic tire [consisting of a series of cushion tubes interposed between the rim and the tire]. W. Clark, London.
- 22,996 (1904). Fountain pen. L. Doms, Vienna, Austria.
- 23,086 (1904). Anti slipping device for tires. [Consists of a series of chains with links closer together in the center, stretched diagonally across the tire and fastened to the rim.] H. Andrew, Plympton, Devon.
- [ABSTRACTED IN THE OFFICIAL JOURNAL FEBRUARY 21, 1906.]
- 23,108 (1904). Valve for feeding bottle. Allen & Hanburys and J. Dowell, London.
- 23,138 (1904). Puncture preventing device. [Metal casing.] J. Monteith, Cranley, Carstairs, Scotland.
- 23,168 (1904). Portable vulcanizing apparatus for motor tires. H. H. Frost, London.
- * 23,171 (1904). Shaving appliance. [Comprising a rubber sponge.] T. E. Beck, Newark, New Jersey.
- 23,283 (1904). Non slipping tire cover. G. Desclée, Laken, Belgium.
- 23,298 (1904). Means for securing pneumatic tire to rim. C. Schmidt, Erfurt, Germany.
- 23,351 (1904). Vulcanizing apparatus [for jointing rubber tire tubes]. Anglian Motor Co. and J. B. Robinson, Newgate street, Beccles.
- 23,362 (1904). Elastic tire. [Built up of layers of canvas cemented together by rubber and having embedded in their bases bands of metal.] J. Cooper, Camberwell, Surrey.
- 23,393 (1904). Heel protector. H. J. Medway, London.
- 23,409 (1904). Football boot [with rubber pad inserted between the upper of the boot and the instep of the wearer]. D. Tomkies, Nottingham.
- * 23,545 (1904). Sand blast apparatus. J. E. L. Barnes, Liverpool. (Marine Construction Co., San Francisco, California.)
- 23,593 (1904). Device for locating punctures in tire inner air tubes. R. Tyler and C. Tyler, Leeds.
- 23,627 (1904). Heel protector. M. E., G. P. E. A., M. E., and E. M. Renard, all of Bordeaux, France.
- 23,652 (1904). Pneumatic tire [formed of a number of radial sections which are inflated during manufacture]. J. Stubbs and A. Shann, Sheffield.
- 23,697 (1904). Pneumatic tire with removable tread. I. Clifford, London.
- 23,703 (1904). Heel protector. A. Norreys, London.
- 23,783 (1904). Waterproof cape. [A rubber gutter with a beveled inner lip is cemented around the edge of the cape to catch the rain drips; a rubber tube communicates with the gutter at the back to convey off the water.] J. Jaques, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION.)

- 357,067 (Aug. 19, 1905). Maurin. Tire.
- 357,157 (Aug. 24). C. Challiner. Elastic tire.
- 357,168 (Aug. 24). C. H. Gray and T. Sloper. Pneumatic tire.
- 357,267 (Aug. 26). The Reillac Tyre Co., Ltd. Elastic tire.
- 357,269 (Aug. 26). A. P. Chopard. Pneumatic tire.
- 357,336 (Aug. 29). J. Neilson. Process for reclaiming rubber.
- 857,429 (Sept. 1). A. Mollinger. Double wheel rim, with pneumatic cushion between.
- 357,430 (Sept. 1). A. Pillard. Fitting wheels with elastic tires.
- 357,474 (Sept. 4). H. Harman. Pneumatic tire protector.
- 357,484 (Sept. 5). V. A. Perruche. Apparatus for cementing tread to pneumatics for vulcanization.
- 357,544 (Sept. 7). Société O. Englebert fils et Cie. Tire inner tube.
- 357,575 (Sept. 8). J. A. Plassard. Tube with protector for pneumatic tires.
- 357,612 (Sept. 9). J. Cooper. Tire and method of fastenings same.
- 357,616 (Sept. 9). A. Vogelgesang. Method of protecting deflated tires.
- 357,626 (Sept. 9). H. Catrice. Compressible tires.
- 357,662 (Sept. 12). P. Gaultier. Burst proof pneumatic tire.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Counsel, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

NEW GOODS AND SPECIALTIES IN RUBBER.

THE "MARCEL" COMB.

A DISTINCTIVE novelty in rubber dressing combs is illustrated herewith. It is marketed under the name "Marcel." In this comb the teeth are undulated and carried alternately to the back, insuring strength and flexibility, and assisting greatly in the disentangling of the hair.



The Marcel comb is designed on scientific principles, has a beautiful appearance and for strength and durability cannot be excelled. The manufacturers report a large and increasing demand for this comb. [American Hard Rubber Co., No. 9 Mercer street, New York.]

NEW MARKET FOR RUBBER HOSE.

A NEW method of felling and cutting up forest trees is of peculiar interest because it opens one more important market for rubber hose of good quality.



The newest tool designed to supplant the woodman's ax consists of a saw that is operated by means of compressed air. From the storage reservoir lines of hose are stretched to the different points in the forest where trees are to be cut down. At the end of each hose is a cylinder and piston operating a large saw. These are mounted on a clamping bracket to hold

them in rigid connection with the log, and the operator has only to press the valve lever to admit air to the cylinder, guiding the saw through the log. One saw will do the work of a large force of men working in the old way.

SPALDING RUBBER COVERED INDOOR SHOT.

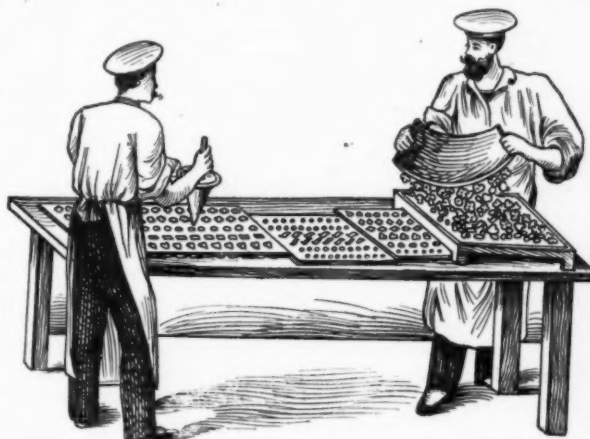
A NOVELTY that will be of particular interest to the athletic fraternity is a rubber covered shot intended especially for indoor gymnasium use. This ball is the result of several years' study by Mr. George L. Pierce, whose practical experience taught him need for such a device. The ball consists of a sphere of seamless, vulcanized rubber, with an internal reinforcement of stout woven fabric. Within this casing is a bag of woven fabric



inclosing enough leaden shot to give the ball the standard weight of 16 pounds. The ball, or shot, is made according to scientific principles, so as to form a perfect sphere. The rubber casing gives a fine grip and also affords the proper resiliency when it comes in contact with the floor. Besides the regulation 16 pound shot, a 12 pound shot is made for those who desire a lighter one. [A. G. Spalding & Brothers, No. 126 Nassau street, New York.]

RUBBER FORMS FOR CANDY MAKING.

A RUBBER mold for use in candy shops is such a simple thing that it would seem that anybody could have invented it, but nobody did until very lately, and now it appears to be an excellent thing. This mold consists of a sheet of rubber, with fanciful designs stamped into it, into which the hot candy is poured. When the candies have hardened, the



sheet is turned upside down, and bent back, which stretches each mold, and dislodges the confections. When hard molds are used, there is always more or less trouble caused by the candies sticking, so that clear impressions were hard to make. These molds are either made in thick, solid sheets, or thin sheets mounted on rubber legs. Before using they are washed in hot water and soda, and cleaned with a stiff bristle brush, and then dried for an hour or more. They must, of course, be kept away from all oil or grease. [Ver-einigte Gummiwaaren-Fabriken Harburg-Wien, Vienna.]

THE "CAT'S PAW" CUSHION HEEL.

To begin with, we must acknowledge that some folks don't know how to walk. Many men walk with their nerves, instead of with their leg muscles, which last are put there primarily for use, and whose beauty increases with reasonable employment. Did you ever notice that the man who does know how to walk actually gains an end something like that of a large wheel rolling? The Manx emblem, used widely in advertising the goods under review, illustrates one phase of the idea. The Manx wheel has three legs, but two will really accomplish the same result. In walking, the heel of one foot goes down before the weight is shifted from the other foot. Each leg is like a spoke in a wheel, the rolling motion being kept up by the constant shifting of the body's weight from heel to toe, each foot taking up the revolution where the other left off. Now everybody in the world, except the German army and Miss Prim's dancing school, walks in this way, from heel to toe, the weight coming on the heel gradually, instead of falling from one heel to the other. Accordingly, there should not be any jar in the rolling of this human wheel. The fact is, however, that most people notice some jar, all of which wears on their

nerves. By the simple device of a cushion heel plate of rubber such as the Cat's Paw, our two noble legs, thus well heeled, become a skid proof rubber tired wheel, whose motion approaches the ease and grace of a barefooted child on the grass. [Walpole Rubber Works, No. 170 Summer street, Boston.]

AN AUTOMATIC AIR BRAKE COUPLING.

AIR brakes are of such general use and importance, that an automatic air pipe coupler, such as this, would naturally attract attention. The two, or rather the four members, which constitute this coupler, are supported by the cars. The joint is made by two U tubes, which fit into each other. The limbs of each U tube form a male and a female member, which fit air tight with the corresponding female and male members of the other. Each female member bears a guiding funnel, for the reception of the male member of the coupling. Each male member bears a nipple or piston of rubber, while the female members are lined with rubber. Thus, the coupling is automatic and air tight. The great danger which was formerly connected with the coupling of cars has now been removed by the automatic car coupler. The coupling of air brake hose does not carry with it such a considerable element of danger, yet there is a certain risk, and a considerable delay connected with the present method, both of which would be eliminated by the use of the automatic air pipe coupling. [Pietro Setting and Peter Hoover, patentees, Steelton, Pennsylvania.]

THE "KANTLEEK" WATER BAGS.

SPEAKING of hot water bags recalls the drummer "down East" who was accustomed to make a little money go a



long way, like good rubber. In response to a strong internal demand, he had stopped by the roadside for lunch; but before he had taken more than a few bites, was seized of a violent pain in his stomach, and cried aloud in his agony. In answer to his pitiful gasps, a rescuer took his (the drummer's) water bag, filled it with boiling water, and laid it gently over his inwards. Recovering instantly, the sufferer proceeded to warm up several fried eggs and slices of meat on the water bottle, and then poured out of it a

cup of hot coffee, and thus made a good meal. This biography is not meant to point a moral, but to illustrate some unusual uses of the hot water bag. The most authentic manuscripts do not say whether the bag which he used was a "Kantleek," but it probably was, because it did not leak. The Kantleek hot water bottles, fountain syringes, face bags, and ice caps are made for different uses, and in fashions differing from each other; but all bear the celebrated "Red Seal" trade mark, and are sold with the manufacturers unqualified guarantee. It has been said that plenty of cold water on the inside and the outside will cure four-fifths of the ills that human flesh is heir to. Local applications of hot water will relieve other ills not amenable to cold water. The Kantleek goods will attend to the whole matter of hot or cold local outside applications, and will cover several branches of the inside applications. If there were but one hot water bag in the world, it would be worth a million or so, but the Kantleek make so many, that they can sell them cheap, in various sizes, in red or white and will even cover them with softest eiderdown for a trifling consideration. Their syringes and ice caps are also made in beautiful style, in various sizes and shapes, of pure white rubber, with satin finish. [Seamless Rubber Co., New Haven, Connecticut.]

AN ENGLISH VACUUM DUST EXTRACTOR.

REMOVING dust from carpets while lying on the floor of a room is by no means a novelty, but it has heretofore been



done by high power machines stationed in the street in front of the house, or by more or less expensive plants installed in the basements of large buildings. The air current necessary to remove the dust is carried through a rubber hose pipe to a receptacle outside

into which the dust is deposited. The utility of the vacuum process is generally recognized, its cost being the only thing that has prevented its taking the place of the old fashioned broom and dust pan method to a large extent. It has remained for an Englishman to invent cheap apparatus that is intended to take the place of the big machine. He has contrived a bellows like box which is fitted with the necessary tubing and attachments and containing a vacuum pump that is operated by foot power somewhat after the manner of a two pedaled sewing machine, the bellows box resting upon the floor of the room while the machine is in use. [The Witch Dust Extractor Co., Birmingham, England.]

A NEW PUNCTURE PROOF TIRE.

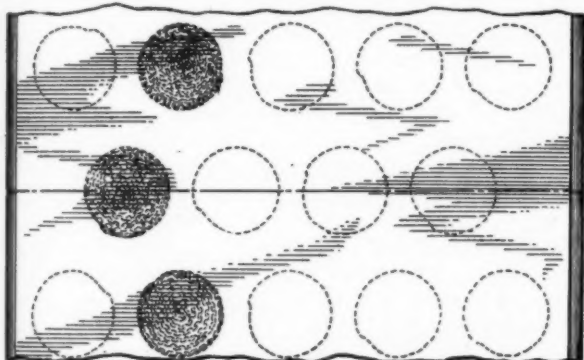
A new skid and puncture proof tire protector is illustrated herewith. The tread is of stout material, the skid feature being gained by the projection of numerous rivet heads. Within the body of the protector is a puncture resisting layer composed of overlapping strips of metal, too thin to interfere appreciably with the resiliency, and yet practically impenetrable. These metal strips are held in place by having thin layers of rubber vulcanized between them, and rivets passing



though all. The whole is also reinforced by metal binding strips upon the margins. Underneath the tread, next the tire, is a lining made of fabric, enclosing a layer of granular cork, which serves to prevent heat reaching the tire. This lining forms part and parcel of the protector, which is in one piece. The tread is fastened on the tire by hinged clips, which hook under the rim clinches. This hinge in the clips is a valuable idea in itself, if it is made of rust proof metal. [John E. Caps, inventor, Kansas City, Missouri.]

THE VOORHEES CONVEYING BELT.

AFTER experimenting for a number of years, Mr. John J. Voorhees has produced and patented a conveyor belt which differs from others, with their surface of soft rubber, in that its outer covering is so arranged that the cotton or other fiber stands on end instead of being laid within the body of the belt in layers. The ends of the fibers project slightly beyond the smooth surface of the rubber, thereby supplying something that takes the greater part of the wear from the



rubber outer covering and adding greatly to the life and utility to the belt. This fabric is vulcanized into the belt, giving it the quality of great resistance to friction, without detracting from its flexibility. It is claimed also that the belt is much stronger than that made under the old processes. In one type of the Voorhees belt the vertical fibres are distributed uniformly throughout, while in another the fibers are disposed in clusters which may be as close and of any size as may be desired. These clusters may be formed of individual vertical fibers or flat tapes of fibers wound around to the desired size; but a substantial part of the fibers must project vertically, so as to take the wear and tear of the surface friction upon the ends of the fibers. [Voorhees Rubber Manufacturing Co., Jersey City, New Jersey.]

A NOVEL PNEUMATIC TIRE.

A STRIKING novelty that is engaging the attention of many automobilists is the R. & P. Traction Tread Tire, which has just been brought out. This tire is constructed on lines that are unlike those of any other anti skid, and it is claimed that, while as near puncture proof as it is possible for a pneumatic to be, even if a puncture should occur it would be attended by no bad consequences. The tire has two distinct features: (1) a flat tread made of tough rubber, and (2) a double ply interlining of bullet proof cloth. A leather protector

studded with steel rivets is attached to the tread by means of steel clamps that form a part of the protector itself. The bullet proof cloth is woven in such a manner that even should it be punctured, the wound closes itself, thus allowing no air to escape, so that tire repairs while on the road are unnecessary. Mr. John D. Prince, the inventor, and in charge of the New York office, is looking for a suitable factory. [R. & P. Traction Tread Tire Co., New York.]

"GIBRALTAR" PACKING.

WE have received a neatly got up sample of the "Gibraltar" black sheet packing, which seems to be an excellent product. It is astonishing how resistant this substance is to all conditions. It is pliant and yielding, extremely tough, and is entirely indifferent to oils, ammonia, or alkalis. It is recommended for the most difficult places, where other packings have failed. When used in steam fittings, it will not harden or burn under severe heat, and will not blow out under the highest pressure. It comes in four thicknesses, from $\frac{1}{8}$ inch to $\frac{1}{4}$ inch, and is also furnished in gaskets and rings. [New Jersey Car Spring and Rubber Co., Jersey City, New Jersey.]

ROEDDING REPAIR SOLE AND HEEL.

To the lumberman, rubber boots and shoes are as much a necessity as an axe. It is a hard life at best; but if he can keep his feet dry and warm, a certain measure of comfort is assured, no matter if Nature



is trying to protect her forests in her own way, by loosing the elements against the woodsman. One great trouble about rubber footwear under all conditions, is the fact that it wears out too easily. A rubber boot or arctic overshoe may be perfectly good, except for a cut or worn place in the sole. To provide for this contingency, a Canadian firm is making repair soles and heels, by means of which a rubber boot or shoe can be easily soled by anybody, and made practically as good as new. A special rubber cement is supplied for the purpose. [The Merchants Rubber Co., Limited, Berlin, Ontario.]

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for January, 1906, and for the first seven months of five fiscal years, beginning July 1, from the treasury department at Washington:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
January, 1906....	\$ 89,502	\$ 195,657	\$ 227,978	\$ 513,137
July-December....	648,498	1,043,180	1,398,042	3,089,720
Total.....	\$738,000	\$1,238,837	\$1,626,020	\$3,602,857
Total, 1904-05.	530,538	971,261	1,338,168	2,839,967
Total, 1903-04.	530,805	828,645	1,401,255	2,760,705
Total, 19 2-03.	467,156	874,830	1,229,405	2,571,391
Total, 1901-02.	355,509	833,034	940,363	2,129,806

THE revolving rubber heels, after having a great run in England, have at last reached Germany, and Mr. Gustave Pabst, of Hamburg, is doing quite a business in them. They are also offered by a number of German manufacturers.

NEWS OF THE AMERICAN RUBBER TRADE.

FISK RUBBER CO. IN CHICAGO.

THE Fisk Rubber Co. (Chicopee Falls, Massachusetts) have acquired a long lease on Nos. 1440-1442 Michigan avenue, Chicago, on which they are erecting a building 27 x 170 feet, two stories high, with basement, which is intended to be a model rubber tire supply house, repair shop, and garage. This will be the headquarters of Mr. Ben H. Pratt, the company's Chicago representative, and Mr. Frank C. Riggs, manager of their Western district.

A RUBBER FACTORY IN KANSAS.

THE Kansas Rubber Co. has been organized with headquarters at Olathe, Kansas (about 20 miles from Kansas City), for the purpose of manufacturing mechanical rubber goods. A building for the factory has been completed and a representative of the company was recently in the east purchasing machinery. The company intend beginning with the production of solid rubber tires, mold work, and packing. They expect to make specialties of oil well and plumbers' supplies. The officers of the company are business men of the town named: I. B. Hibner, president; Edward Ripley, vice president; Charles Ott, treasurer; and Luther Moore, secretary. Charles A. Besaw, the superintendent, has been employed hitherto in the rubber industry at Akron and Milwaukee. He has a process for rubber reclaiming which the company purpose utilizing for supplying their own requirements in reclaimed rubber.

THE NEW RUBBER FACTORY IN INDIANA.

THE Elkhart Rubber Works (Elkhart, Indiana), the incorporation of which was reported in the last issue of this Journal, advises that their plant will be running some time during this month. Their intention is to manufacture automobile tires, valves, heels, bumpers, hose, and ultimately a general line of mechanical rubber goods. The president is Mr. Harry M. Shepherd, lately of Chicago, who is the principal shareholder. The company occupy a brick building 225 feet long and 54 feet wide, with an extension L at one end 50 x 50 feet. New machinery has been bought and the company plan to have one of the best equipped factories in the West.

APSLEY GOODS ON THE PACIFIC COAST.

It is understood that the newly incorporated Rubber Manufacturing and Distributing Co. will have their headquarters at Seattle, Washington. They intend to do a general rubber business and have secured the agency of the Apsley Rubber Co.'s full line of rubber boots, shoes, and clothing for Seattle, and also Portland, Oregon. It is rumored that they may manufacture a line of heavy rubber boots, lumberman's, and arctics at Seattle, making a line similar to the Mishawaka Woolen Manufacturing Co.'s, and marketing them on the same lines, direct to the retail trade. The company have rented a warehouse and are now located at No. 552 Perth avenue, Seattle. Mr. L. B. Hitchings, formerly of the Illinois Rubber Co. (Chicago) is the local manager. He took three salesmen with him from Chicago and has engaged two or three since he arrived on the field. The territory is being covered and they are out for business, and it may be very safely stated that the Pacific coast is to have another

strong, wide awake, and important rubber house. It is understood that the list of stockholders in the new company includes the Hon. L. D. Apsley, president and treasurer of the Apsley Rubber Co. (Hudson, Massachusetts), Joseph S. Bradley, President of the Hudson National Bank, Albert D. Gleason, Gleasonville, Mass., General William F. Draper, Hopedale, Mass., and United States Senator Murray W. Crane, Dalton, Mass., and that Ex-Congressman Apsley is president of the new company.

TO MAKE GOLF BALLS AT YOUNGSTOWN.

THE Republic Rubber Co. (Youngstown, Ohio) have taken on the manufacture of the golf balls marketed by the Seaman Manufacturing Co. (Milwaukee, Wisconsin) during the life of the patents, and will make exclusively the "Par" ball. The machinery of the Seaman company has been installed in the factory at Youngstown, in charge of Mr. A. D. Seaman, inventor of the ball, who will have charge of this department for six months. The ball will be marketed entirely independent of any combination or agreement with other manufacturers. A space of about 5000 square feet in the factory has been assigned to this department, and it is understood that orders have been received for a large number of balls.

HARBURG TIRES IN AMERICA.

THE Harburg Tire Co. (New York) the incorporation of which was reported in THE INDIA RUBBER WORLD January 1 (page 130) have established headquarters at No. 234 West Fifty-eighth street, where they have one of the most complete establishments of the kind. The building, which has been rebuilt especially for them, is two stories high, 100 feet deep and with a frontage of 21 feet. Besides, there is a basement under the whole building which makes an ideal storage room for rubber stock. The company will handle the product of the Harburg and Vienna Rubber Co. (Vereinigte Gummiwaaren-Fabriken, Harburg-Wien) of Germany and Austria. Mr. R. L. Kingston is the manager. In connection with the salesrooms there is a finely equipped repair shop with a force of expert workmen.

A LARGE SPORTING GOODS BUSINESS.

A. G. SPALDING & BROTHERS (New York), whose large distribution of sporting goods embraces a great variety of articles of rubber, have filed with the New York commissioner of corporations a statement of condition comprising these details: Date of annual meeting, July 31, 1905. A. G. Spalding, president; William T. Brown, treasurer. *Assets*: Merchandise, \$647,200.60; cash and debts receivable, \$2,279,456.36; patent rights and trade-marks, \$1,998,801.64; good will, \$2,000,000; total, \$6,925,458.60. *Liabilities*: Capital stock, \$3,450,000; accounts payable, \$731,775.36; floating indebtedness, \$660,068; surplus, \$2,000,000; profit and loss, \$83,615.24; total, \$6,925,458.60.

ALLING STORES IN MASSACHUSETTS.

THE Alling Rubber Co., who for several years past have been operating a chain of rubber stores in Connecticut, have added to their list two stores in Massachusetts. On March 17, W. S. Alling of Norwich, Conn., opened a rubber store at No. 606 Main street, Worcester, Mass., which will be un-

der the management of E. H. Oehlhof, for the past eight years employed in the Alling stores at Norwich and New London. On the same date Noyes E. Alling and Amos P. Mitchell opened a rubber store at No. 128 North street, Pittsfield, Mass., which will be managed by John Myers, who has been employed in the New Britain and Hartford stores. For reasons due to his health alone Mr. Noyes E. Alling, the president of the Alling Rubber Co., will change his residence from Bridgeport, Conn., to Pittsfield, Mass., thinking that the higher altitude of the latter place may prove beneficial.

THE MATTSON RUBBER CO. FIRE.

THE five story factory and warehouse of the Mattson Rubber Co., at No. 26 West Broadway, New York, was badly damaged by fire on the night of March 12. The two upper stories were entirely destroyed and the three lower ones so damaged that extensive repairs will be necessary before they can again be used for business. The loss to stock and building is estimated by the company to be \$25,000, which was covered by insurance. While the company are arranging for permanent offices they have secured temporary headquarters at No. 76 Park place. The company were particularly fortunate in being able to make an arrangement with the Hardman Rubber Co., whereby they will hereafter manufacture at the Hardman works in Bellville, New Jersey. This means that the Hardman company will discontinue the manufacture of soft rubber goods, but will make hard rubber goods as heretofore. Just what will be done with the old factory in West Broadway when the repairs are completed has not been decided.

CHANGES IN RUBBER FACTORY MANAGEMENT.

JOHN ROBSON, for four years past general superintendent of the Woonsocket Rubber Co., has resigned that position and will be succeeded by George Schlosser, who has meantime been superintendent of the "Alice" and Millville factories of the company. Mr. Schlosser has retained Harry Wagner as superintendent of the Millville factory and will take charge of the "Alice" himself. Mr. Schlosser is a native of New Jersey and entered the rubber industry in the employ of the New Jersey Rubber Shoe Co. Later he went to Bristol and for five years was superintendent of the National India Rubber Co., after which he became connected with the Woonsocket company. Mr. Robson returns to Malden to take charge of the factories of the Boston Rubber Shoe Co., with which company he was long associated. During Mr. Robson's connection with the Woonsocket company the factories of the Boston Rubber Shoe Co. have been under the management of Colonel Frank L. Locke, who has gone to the Pacific coast on account of ill health.

CANADIAN RUBBER CO.'S ANNUAL.

At the annual meeting of shareholders of the Canadian Rubber Co. of Montreal Limited, on March 8, an entirely new board of directors was chosen, thus completing the change of control already reported in THE INDIA RUBBER WORLD. The new board consists of Major G. Washington Stephens, M. L. A., D. Lorne McGibbon, Shirley Ogilvie, Alexander Pringle, M. C. Mullarky, H. J. Fuller, Harrison C. Frost, C. C. Ballantyne, and R. J. Younge. Major Stephens was elected president and Mr. McGibbon vice president and managing director.

Major Stephens, the new president, is one of the best

known of the younger generation of Canadian capitalists and business men; he is a member of the Quebec legislature. Four members of the board are actively connected with the business of the company: Mr. McGibbon, the general manager; Mr. Frost, manager of the general rubber division; Mr. Mullarky, manager of the rubber footwear department; and Mr. Younge, general sales manager. Of the remaining directors, Mr. Ballantyne is Canadian manager of the Sherwin Williams Paint Co., and president of the Canadian Manufacturers' Association; Mr. Pringle is a partner in T. Pringle & Son, construction engineers; Mr. Ogilvie is secretary of the Ogilvie Flour Mills Co., Limited; and Mr. Fuller president of the Canadian Fairbanks Co.

The annual report disclosed a highly satisfactory state of affairs. Despite the high cost of raw materials during the past year, a large increase in profitable business was gained. The dividend declared was 5 per cent. Referring to a report published in Canada of an offer made for the purchase of the company Mr. McGibbon advises THE INDIA RUBBER WORLD: "As far as the rumor that the United States Rubber Co. has made us an offer for our property, I wish to deny this. Our company is not for sale, and it is our intention to increase our capital in the near future, to provide for further extensions, both in plant and business."

It is understood that the directors have plans under consideration for establishing a large distributing branch in London, from which center direct shipments of "Canadian" rubbers will be made to the trade in the United Kingdom and also to the company's numerous distributors on the Continent.

RUBBER SHOE PRICES IN CANADA.

NEW lists on rubber footwear were issued by the Canadian manufacturers on March 12. The list prices do not vary essentially from those issued by the factories in the United States, except that some changes have been made to "even up" the lists. There has been some objection among retailers to what they considered inequalities in past lists. The trade discount this year is 20 per cent. from lists, against 17 per cent. last year. A special discount of 5 per cent. will be allowed until June 1 to encourage the placing of early orders. The cash discount is as usual 2 per cent.

THE BOSTON AUTOMOBILE SHOW.

THOSE who attended the fourth annual Boston Automobile and Power Boat Show (March 10-17) will not be easily convinced that it was the swan song of the Hub motorists. It is not likely that an exhibition that was so successful and so broad in its scope will not be followed by another. The Boston show by far exceeded the expectations of its promoters. This is true not only in point of attendance, but in the number and variety of exhibits. A significant fact is that there were more commercial vehicles shown than at either the New York or Chicago national show. Nearly every leading American and European maker of automobiles was represented and some had as many as half a dozen cars on view. The total number of cars shown was 763. The motor boat feature of the show was important in that it brought out a larger number of marine motors than were ever seen at a similar exhibition. What is true of the finished product in regard to number and quality of exhibits is equally true of the tire and other accessory departments, especially the former. The show attracted visitors from all

parts of the country and as a whole was so successful that a hard fight will be made against the decree of the automobile associations that hereafter there shall be but two national shows each year—at New York and Chicago. The exhibitors of tires and rubber accessories were:

A. W. Chesterton & Co.	Boston.
Firestone Tire & Rubber Co.	Boston.
Iron Tire Pneumatic Wheel Co.	New York.
Healy Leather Tire Co.	New York.
George W. Knowlton Rubber Co.	Boston.
Samson Leather Tire Co.	New York.
Columbia Vehicle Tire Co.	Boston.
The Pantasote Leather Co.	New York.
Mitchell Punctureless Pneumatic Tire Co.	Swampscott, Mass.
Boston Tire and Rubber Co.	Boston.
Pennsylvania Rubber Co.	Boston.
Salisbury Tire Co.	Owosso, Michigan.
Voorhees Rubber Co.	Jersey City, N. J.
Electric Rubber Manufacturing Co.	Rutherford, N. J.
L. C. Chase & Co.	Boston.

A NEW ELECTRIC CABLE COMPANY.

THE Electric Cable Co. (No. 42 Broadway, New York) has been formed to succeed the Magnet Wire Co. and the Peerless Electric Co., to manufacture wires for electrical purposes and "Voltax", a new non rubber insulation. Some important orders have been received from large buyers of insulated wire, including one for 15 miles from the Interborough Rapid Transit Co., of New York. The "Voltax" insulation is referred to as having been under tests for some years past, but it is now being placed on the market extensively for the first time. The officers of the company are Edwin W. Moore, president; Frederick H. Cowles, vice president; J. Nelson Shreve, treasurer; and H. S. Williston, secretary and electrical engineer. The company are erecting a large factory at Bridgeport, Connecticut.

A RUBBER MACHINERY FACTORY.

THE illustration shows the plant of the Bay State Machine Co. (Erie, Pennsylvania), manufacturers of rubber molds and rubber machinery. This company was established in March, 1898, to build gas and gasoline engines and do a general



machine business. Through Mr. Edward E. Allen, who is now president of the company, and who previously had charge of the mechanical departments of several rub-

ber works, orders for mold work and other appliances for rubber factories came in unsolicited, so that this business began to grow and finally became their most important line and demanded increased facilities. Larger quarters were obtained, therefore, and the company became incorporated August 27, 1902. In less than three years these quarters were outgrown and in the summer of 1905 the factory shown above was erected by the company on a specially well located site belonging to them in Erie. The factory is thoroughly

equipped with modern machinery and well lighted and ventilated. The offices are handsomely furnished and are a cheerful place to drop into. The Bay State company are turning out an extensive line of rubber tubing machines, hydraulic presses, self vulcanizing wagon and automobile tire molds, bicycle tire molds, and molds for various kinds of mechanical goods. The familiarity of Mr. Allen, the president and superintendent, with the rubber business, as well as with mechanics, adapts him for the management of such a business. The other officers are H. G. Diefendorf, vice president and business manager, and T. O. Andrews, secretary and treasurer.

NEW INCORPORATIONS.

RUBBER Manufacturing and Distributing Co., March 7, 1906, under Maine laws; authorized capital, \$500,000. Directors: L. D. Apsley, Burton E. Eames, L. Barton, E. E. Noble, and G. E. Fogg. A fuller notice appears on another page.

—H. M. & S. Armored Tire Co., February 26, 1906, under Pennsylvania laws; capital, \$5000, fully paid. Object, to manufacture hose and pneumatic tires under patents of James H. Swain. Oliver S. Hershman is president; Alexander P. Moore treasurer; and Mr. Swain secretary. Offices: No. 325 Fifth avenue, Pittsburgh, Pa.

—Burmester Rubber Co. (Boston) February 19, 1906, under Massachusetts laws; capital authorized, \$10,000. Incorporators: Frank H. Burmester, president; Melrose D. Davies, treasurer; George A. Sweetzer, clerk. Object, the selling of new tires of all kinds and the repairing of old ones.

—The Dentists' Dental Rubber Co., February 24, 1906, under Ohio laws; capital authorized \$1000. Incorporators: H. E. Andress, James W. Hoffert, M. M. Montenyoke, C. F. Grant, and F. E. Whittemore, all of Akron, Ohio.

TRADE NEWS NOTES.

THE Gutta Percha and Rubber Manufacturing Co. (New York) have changed the location of their San Francisco branch to more eligible quarters—No. 26 Fremont street.

—Mr. Otis R. Cook, for some years western traveling representative of The B. F. Goodrich Co. (Akron, Ohio), has resigned to become connected in a similar capacity for *Automobile Topics*, a New York publication.

—The Pittsburg Rubber and Leather Co. on April 1 take possession of new quarters, No. 14 Wood street, comprising four floors and basement in the 12 story Hartje building, Pittsburgh, Pa. They have there over 7000 square feet of floor space, against 2200 square feet at the old location.

—The factory of the National India Rubber Co. (Bristol, Rhode Island), was shut down in all departments for repairs and inventory on March 17, and will resume work on April 2.

—The two factories of the Woonsocket Rubber Co. were closed on March 29 for annual stock taking and general repairs.

—The final account of Frederick W. Starr, appointed May 17, 1904, receiver of the Royal Rubber Works Co. (Hartford, Connecticut), has been accepted by the court. The assets realized \$770.56, which permitted the payment of 18 per cent. on the unsecured claims after paying the expenses of the receivership. The company was incorporated in 1903, with \$4000 capital, to do a jobbing trade in rubber goods and hospital supplies. The receiver reported that the books had been badly kept and presented evidences of fraud.

=The Banner Rubber Co. (St. Louis, Missouri) on March 14 filed suit in the circuit court against Friedman Brothers Shoe Co., of the same city, for \$60,811.55. The plaintiff asks \$42,917.45 for rubber boots and shoes alleged to have been sold under contract to the defendant December 6, 1904, and for \$17,894.10 for rubber boots and shoes alleged to have been sold to the defendant and held for orders, but never taken.

=It is announced that the factory of the Goodyear's Metallic Rubber Shoe Co. (Naugatuck, Connecticut), which has been closed for some time, will resume work on April 16. At the same time the factory of the Goodyear's India Rubber Glove Manufacturing Co., which closed for inventory on March 24, will resume work. The reclaiming plant of the United States Rubber Co., which closed in the middle of March, after having been run night and day for a year, will resume work early this month.

=The directors of the Celluloid Co. (Newark, New Jersey) have declared a quarterly dividend of $1\frac{1}{2}$ per cent. on the capital stock, payable April 2. The annual meeting was held in Newark on March 27.

=Thirteen firms tendered for the supply of fire hose to the city of Denver, Colorado, recently, when 10,000 feet was advertised for and the business was secured by four firms. Now the local representatives of the nine unsuccessful firms are complaining through the newspapers that a local political ring makes fair competition impossible, and that orders go by favor, without regard to price or quality of the goods. One firm asserts that next year it will tender for hose at below cost "just for the fun" of seeing what the city authorities will do.

=Mr. William Niedner, general manager for Charles Niedner, manufacturer of linen fire hose, at Malden, Massachusetts, has returned from an extensive business tour of the West and South, and reports business in their line very satisfactory.

=E. H. Broadwell, vice president of the Fisk Rubber Co. (Chicopee Falls, Massachusetts), spent part of last month in Bermuda, for the purpose of recuperating his health.

=Dr. Erwin Meyer, of Hanover, Germany, has accepted a position with the Rubber Goods Manufacturing Co., where he has charge of the research work in chemistry. It would be hard to find a man better fitted for this work. Dr. Meyer is a Doctor of Philosophy in the University of Berlin, where his ability, diligence and resourcefulness won for him the estimation of his professors and associates. With this most excellent preparation in chemistry, Dr. Meyer became chief chemist in the St. Helens Cable Co., Limited (Warrington, England), where he remained three years. His work there was in connection with rubber, rubber substitutes, and insulating compounds, so that he brings to the Rubber Goods company a thorough knowledge of the theoretical and practical details of the chemistry of rubber.

=American Chiclé Co. dividends remain at 1 per cent. per month on ordinary and $1\frac{1}{2}$ per cent. quarterly on preferred shares. Quotations on March 24 were: *Ordinary*—175 bid; 180 asked. *Preferred*—104½ bid; 107 asked. Based upon the prices "bid," the \$9,000,000 of the company's issues would figure out at \$13,635,000.

=Mr. A. M. Stickney, president of the Wellman Sole Cutting Machine Co. (Medford, Massachusetts), has been very ill with pneumonia, but he is now pronounced out of danger.

=The Sawyer Belting Co., one of the subsidiary companies of the Rubber Goods Manufacturing Co., having completed the removal of their plant from East Cambridge, Massachusetts, to Cleveland, Ohio, all communications to them should be addressed to the latter place.

=Myron R. Hutchinson, for many years in France engaged with A. Hutchinson & Co., National India Rubber Co. of France and Germany, and later director of the works in Germany, has come to this country to stay, and is now in Boston.

=Mr. James A. Braden has resigned his position as advertising manager of the Diamond Rubber Co. to accept a similar position with the Atlantic Refining Co., of Cleveland, for whom he will exploit a new chemical product. Mr. Braden has been with the Diamond company for almost three years, leaving the newspaper business to accept the place. He will be succeeded on April 1 by Mr. H. S. Quine, who quits the same position on a local newspaper that Mr. Braden formerly held before he took up advertising work.

=The Buckeye Rubber Co. are planning to build an addition to their plant in East Akron, and sheds connecting this addition to the main plant. The sheds will be used for storing lumber.

=It is rumored that the La Crosse Rubber Mills Co. (La Crosse, Wisconsin) are considering a change of location, with a view to increasing the capital and building a larger plant, for the manufacture of rubber footwear.

=R. C. Cooley, trustee of the Dickinson Hard Rubber Co., (Springfield, Massachusetts), has conveyed to the Third National Bank of Springfield, the real estate occupied by that company hitherto.

=An extensive addition is being made to the plant of the Siemon Hard Rubber Corporation (Bridgeport, Connecticut).

=The Western Rubber Co. (Goshen, Indiana) are reported very busy, and have recently been ordering considerable machinery.

=Colonel Samuel P. Colt, president of the United States Rubber Co., is reported to have contributed \$10,000 to the John Hay memorial library fund of Brown University, started recently by the subscription of \$150,000 by Mr. Andrew Carnegie. Another item of news respecting Colonel Colt relates to the possibility that he may be a candidate for United States senator from Rhode Island to succeed Mr. Wetmore.

=The Standard Asphalt and Rubber Co. filed articles of incorporation in New Jersey on March 9, with \$1,000,000 capital authorized, in shares of \$1. Its stated object is to mine and sell bitumen, asphalt, rock, and minerals, and to carry on a general import and export business. The incorporators are: H. O. Coughlin, Thomas F. Barret, and John R. Turner, all connected with a corporation agency in Jersey City.

=The Fairfield Rubber Co. (Fairfield, Connecticut) recently extended their working hours to 10 P. M. and were reported to be likely to work nights all this summer.

=The Consolidated Tire Co. sued the Springfield Rubber Tire Co. (New Haven, Connecticut) in the United States at Hartford for alleged infringement of trade mark and brand. The defendant filed a demurrer that the trade mark used did not sufficiently resemble the plaintiff's trade mark to form a *prima facie* case of infringement. The court on March 15 overruled the demurrer and allowed the defendant 20 days in which to file an amendment.

=The Day Rubber Co. (St. Louis) have established a branch at Joplin, Missouri, under the management of F. C. Jones and O. G. Jones, who have been connected with the house for several years. The Joplin branch will carry a large stock of belting, packing, pump valves, steam hose, air hose, and other supplies suited to the trade of a mining district.

=The Perfect Golf Ball Co. have made an assignment to the benefit of creditors, to William H. Heustings, of Boston.

=The Montreal fire and light committee have given an order for 7500 feet of fire hose to the Canadian Rubber Co. of Montreal, at a higher price than some of the competing goods offered.

=The Electric Vehicle Co. (Hartford, Connecticut) have brought suit against the Hartford Rubber Works Co., alleging infringement of certain patents on tires. The Turner endless tire is involved.

=Boston Woven Hose and Rubber Co., hitherto a corporation under the laws of Maine, have filed articles of incorporation with the secretary of state of Massachusetts, with \$1,200,000 capital. J. N. Smith is president, and H. B. Sprague, of Lynn, Mass., treasurer.

ASBESTOS MEN WANT MORE PAY.

A BOSTON report [March 24] says: "During the past week a special committee from Insulator and Asbestos Workers' Union 6 has visited the employers in that industry and presented them with the union's request for an advance in wages from \$3 to \$3.50 a day of eight hours, to take effect on May 1, 1906. As the meeting of the union last night in Rathbone Hall the committee reported that the employers had refused to grant the request on the ground that it was inexpedient and that they could not afford it at the present time. The members discussed the attitude of the employers at length and voted to stand by their demand on May 1. Trade was reported good, with every member at work, and a demand for union men from several sources. Four new members were admitted and one application for membership acted upon."

NARROW ESCAPE OF A RUBBER STEAMER.

AN important cargo of rubber was endangered by the stranding of the steamship *Cearense* on Island Beach, New Jersey, on March 16. The *Cearense* left Para on March 3, and was consigned to Booth & Co., New York. She went ashore in a blinding snowstorm, and was severely pounded by the high seas until she was pulled off the sand bar on March 19. The vessel was badly damaged, but the cargo was finally landed intact. The manifest shows 1,047,000 pounds of rubber, the details of which appear in the regular statistical pages of this Journal.

MILWAUKEE RUBBER WORKS CO. INSOLVENT.

A PETITION in involuntary bankruptcy, alleging debts exceeding \$100,000, was filed against the Milwaukee Rubber Works Co., whose plant is located at Cudahy, Wisconsin, at Milwaukee on March 21. The complaining creditors are William Becker, a director in the company from the beginning and latterly its president, and several companies who have sold supplies to the rubber works. Mr. Becker appears to be by far the largest creditor. The company was incorporated in March, 1903, with \$200,000 capital paid in, and has made a specialty of the manufacture of tires. There have been reports recently of plans for reorganizing the com-

pany, and as the factory has been active all the while, the hope is entertained that some one of these plans may be successfully developed.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co. :

DATES.	Common.			Preferred.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Feb. 24	7,140	51	49	800	109½	108
Week ending Mar. 3	10,300	52½	48¾	5,905	113½	108
Week ending Mar. 10	17,063	54½	50¾	9,150	114	111
Week ending Mar. 17	7,400	54	53	4,700	113¾	112½
Week ending Mar. 26	6,550	53½	52¼	1,650	113½	112

SECOND PREFERRED.

WEEK ending—Feb. 24.	Mar. 3.	Mar. 10.	Mar. 17.	Mar. 24.
Sales..... 860	2,800	4,500	1,100	450
High..... 81	82½	84¾	84½	83
Low..... 79¾	80	81¾	82	82¼

UNITED STATES RUBBER CO AFFAIRS

DURING the latter part of March there was an unusual amount of trading in common stock of the United States Rubber Co., and at advanced figures. The situation as generally regarded is indicated in this extract from the financial columns of the New York *Sun*, March 27:

Dividend expectations figured in the advance in United States Rubber, but the Street could not understand why if earnings were large enough to permit of disbursements for the common the preferred issues should utterly fail to reflect the increased prosperity. The traders thought that there was a good deal of manipulation, and that it was not particularly well done, as in their view the best course would be to make a broad and active market for the higher issues and allow the common to shine in their reflected light. In very respectable quarters it was said, however, that whatever might be the object of manipulation of the common stock there was good reason to believe that it would be put on a dividend basis before the end of the calendar year.

It has been asserted in print that the United States Rubber Co. are the real purchasers of the control of the Atlantic Rubber Shoe Co., though this report lacks confirmation. It may be mentioned, however, that control of companies has not always been acquired by the United States through direct purchase.

DIAMOND RUBBER CO.—NEW TIRE.

A SOLID tire for commercial vehicles made on an entirely new plan is being put out by The Diamond Rubber Co. (Akron, Ohio.) It is fastened to the rim by a wire mesh base. In this new tire the ordinary "buggy tire" idea is abandoned, and it is constructed with a wide base with wires running longitudinally and transversely, forming a mesh in which the rubber is fastened. The design of the new tire is to procure efficiency of base and the attaching system, and general economy of shape. A wide tread is used on the theory that in commercial vehicles the tread of the tire must deliver the mileage. A rubber compound is used in these tires which has been developed by careful test under exaggerated loads and varying speeds. It is cured by a process which insures even and perfect vulcanization clear to the center. Patents covering this design of tire have been issued to A. H. Marks. Above 5 inches the twin tire shape is used. The largest tires are even tripled. It is argued that the use of a single tire in sizes above 5 inches is bad practice.

THE NEW JERSEY RUBBER INDUSTRY.

BY A REGULAR CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: A canvass of the rubber manufacturers of Trenton shows the business to be in a most promising condition, and the general opinion is the ensuing year will show the greatest production in the history of the industry in this city. Many plants have enlarged their buildings and increased their force, until there are now about 2000 employes in the various factories.

The Eureka Rubber Manufacturing Co. of Trenton, with their newly installed machinery for the manufacture of automobile and other vehicle tires are steadily pushing to the front in this line.

The Crescent Belting and Packing Co. recently installed a lot of new machinery and increased their force to keep up with orders on hand. The United and Globe Rubber Manufacturing Cos. with their enlarged plant will be able to double the output of last year. The Hamilton Rubber Manufacturing Co., also with added facilities will greatly increase their output.

The Joseph Stokes Rubber Co. have found it necessary to add to their plant and equipment in order to keep up with their growing hard rubber business. The same conditions prevail at the Home, Grieb, and some other companies.

The reclaiming plants are unusually busy and a prominent dealer in scrap rubber said in an interview, that it was very difficult to meet the demands for this class of material. One concern alone is using 30 tons per week and finds difficulty in obtaining supplies even at the advanced prices prevailing.

The large new factory of the United and Globe Rubber Manufacturing Cos. is now in full operation. A line of fourteen new mixers and two washers, together with two large calenders are driven by an 800 HP. Allis-Chalmers engine. Rope transmission is used with very satisfactory results. A new electric lighting plant has also been installed and it is understood that the company expect, with their increased facilities, to do a \$2,000,000 business for this year.

The incorporators of the Walter Automobile Co., with \$1,000,000 capital authorized, and registered office in Whitehead road, near the factory of the Trenton Rubber Manufacturing Co., include a number of well known business men, including Mr. C. Edward Murray and others in the rubber industry, and Washington A. Roebling II. The purpose is to manufacture automobiles and automobile accessories, the latter, it is understood, to include some rubber goods. Plans have been drawn for a factory on a large scale, based upon the results of an inspection of the leading automobile plants in the country by a committee of the shareholders of the new company.

The New Jersey Rubber Co. have purchased a flour mill property adjoining, on the west and southwest, their plant at Lambertville. The addition measures 200 feet front and extends to the Delaware river. The property contains a four story stone mill 40 x 60 feet. All the milling machinery has been removed and the structure is being used as an additional storehouse. Charles M. Dilts, secretary and treasurer of the company, states that during this month they will commence the erection of another building on the purchased land to be used in connection with their rubber reclaiming work.

The employes of the Hamilton Rubber Manufacturing Co., served their annual banquet in Thomann's Hall, in Trenton, on the evening of March 15. It was well attended. Preceding the dinner the workmen participated in a bowling contest between six-men teams. Schmidt was the high roller with 187 to his credit in the last game, and an average of 168. Schmidt's team was composed of Corbett, Palmer, Wilson, Fields, and Ellicott; their opponents were Schultz, Irvin, Ent, Allen, Applegate, and Walker. Captain Schmidt and his men got a total of 2742, and the best the other side could do was 2588. During the dinner a musical entertainment was given.

Mr. Allan Magowan, head of the Modern Rubber Manufacturing Co., at Trenton, is recovering from a long illness with pneumonia, and hopes to be able to resume business shortly. Mr. Magowan is one of the oldest members of the rubber trade, having been engaged in it almost continuously for 59 years—or since entering the employ of the New England Car Spring Co. (New York) in 1847. [A full sketch of Mr. Magowan appeared in THE INDIA RUBBER WORLD, November 1, 1902—page 52.]

What might have proved to be a serious fire was averted at the Empire Rubber Manufacturing Co.'s factory on March 9, by the prompt action of the watchman and the quick response of the fire department. A blaze was discovered among a number of crates of paste boxes in the shoddy department and an alarm at once turned in. As it was the loss was only about \$175.

One of the large calenders in the plant of the Lambertville Rubber Co., broke while in operation on March 7, but fortunately no one was hurt.

The Luzerne Rubber Co., Trenton's newest concern in this industry, which commenced operations last fall, is now in full running order and is rushed with work. Officers of the company state that business is unusually brisk for such a youngster in the manufacturing world. The factory is located at the corner of Dewey and Muirhead streets, East Trenton; it measures 40 x 120 feet, is one story high, on a lot considerably larger and owned by the company. The mill is well equipped and is run by a 200 HP. engine. The output is hard rubber goods, principally for electrical use. The capital authorized is \$60,000, and the officers are: Bruce Bedford president; Joseph L. Bartine vice president; C. Dudley Wilson secretary and treasurer. Frank F. Fox is superintendent.

Fred H. Conover, formerly of the United and Globe Manufacturing Cos., has taken the position of superintendent for The Combination Rubber Manufacturing Co., at Bloomfield.

A fire occurred at the plant of the Eureka Rubber Manufacturing Co. of Trenton on March 23, caused by the explosion of a benzine tank in a shed. The employes of the company tried to extinguish the flames but were unsuccessful and the city fire department was called out. The loss was not more than \$100.

Mr. Irving W. Kelly, a well known former Trentonian, now of Kelly & Williams, druggists' sundries jobbers, of Kansas City, visited this city a few days ago after making a tour of the Eastern rubber manufacturers placing orders. In an interview with the correspondent of THE INDIA RUBBER WORLD, he said the present outlook for the trade was exceptionally bright. He predicts larger sales this year than

ever before. Speaking of the jobbing trade in the West, Mr. Kelly cited his own firm as an example of the development of business. The firm was established only six years ago, but the growth of business has been so rapid that more room was required. To meet the demand a new building was recently erected with a floor space of 20,000 square feet, devoted exclusively to the druggists' sundries line.

Countess Ottilie von Faber-Castell, of the rubber firm of A. W. Faber, has been made the defendant in a \$50,000 suit for trespass brought by James S. Brant, formerly superintendent of the Faber factory, in Newark. The suit has been brought in the supreme court. Brant claims that the defendant had him forcibly ejected from a house which he occupied without paying rent, under a trade agreement with the defendant. The house referred to is in the possession of the defendant and the work of demolishing it has commenced. The countess is also the plaintiff in a \$5000 suit for trespass brought against Brant, which is still pending.

THE TEXTILE GOODS MARKET.

THERE is no appreciable change in the cotton duck market, the demand continuing unabated, except on the part of the rubber shoe trade, whose purchases have naturally been curtailed on account of stock taking. Despite unusually prompt deliveries, the mills have been unable to satisfy the requirements of the mechanical rubber goods trade, whose consumption to date exceeds the amount called for by contracts.

Cotton is being very firmly held in the South, planters showing very little disposition to sell. A certain element are holding their cotton hoping for a 15 cent market before October. It is on this account that the mills are unwilling

to contract for sales very far ahead.

The speculative market has advanced one cent a pound in three weeks, and is at this writing within 100 points of the highest price of the season. A prominent authority states that the public has been out of the market for some time, but that there is a present disposition to follow the bull leader, in which event sensational developments may be expected.

The census bureau's estimate of the 1905 cotton crop was 10,697,013 bales, allowing round bales as half bales, and including linters. For 1904 the crop was 13,697,310 bales, and for 1903 it was 10,015,721 bales. The present and prospective consumption of cotton indicates a record breaking demand in the face of extremely unfavorable weather conditions, the rain and cold weather not only ruining cotton already planted, but seriously delaying further crop preparations.

In addition to adverse weather, the labor situation in the South is regarded as serious, the labor supply being in certain sections inadequate to the making of a normal crop, which must result in the cutting down of the acreage. In other sections where conditions are less unfavorable, it is not thought that the acreage can appreciably exceed that of 1905.

THE Faultless Rubber Co. (Akron, Ohio), have now for an agency on the Pacific coast, the Gorham Rubber Co., with stores in San Francisco, Seattle, and Portland (Oregon). The Denver Rubber Co. (Denver), are also agents for them in Colorado and the middle West. Both the Gorham company and the Denver company carry a full line of the Faultless goods at all of their stores. In addition to this the Faultless company have opened an office in Chicago in the Ogden building, No. 34 Clark street, and one in New York, at No. 43 Leonard street, in the Rothschild building.

REVIEW OF THE CRUDE RUBBER MARKET.

AN advance over last month's figures is quoted on every grade of rubber covered by our list. The advance began early in the month and has been maintained throughout, the market remaining firm at the end of the period under review. Buying has at no time been particularly active, and the lessened activity of late in the rubber shoe industry led to an expectation in some quarters of a weaker market. That this result has not been realized may be attributed to the activity of other branches of the industry, to the liberal consumption of rubber in Europe, and the further fact that the bulk of the current season's output of Pará rubber has been placed on the market. From now on, until the end of summer, exports from the Amazon will be in lessened volume, and visible supplies will steadily become smaller.

Total arrivals at Pará (including Caucho) for the first nine months of the crop season have been:

	1903-03.	1903-04.	1904-05.	1905-06.
Tons.....	23,540	25,580	27,210	a 27,620

[a To March 28.]

The arrivals at Pará last year in March were 5000 tons, and the smaller receipts for the same month this year—reducing materially the increase of this season over last—has also tended to keep up price levels. It now appears unlikely that the current season's crop will show any such gain over that ending June 30, 1905, as last year showed.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on March 30—the current date:

PARÁ.	April 1, '05.	March 1, '06	March 30.
Islands, fine, new.....	127@128	122@123	124@125
Islands, fine, old.....	none here	none here	none here
Upriver, fine, new.....	129@130	126@127	129@130
Upriver, fine, old.....	none here	none here	130@131
Islands, coarse, new.....	74@ 75	73½@ 74	73@ 74
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	96@ 97	93½@ 94	94½@ 95
Upriver, coarse, old.....	none here	none here	none here
Caucho (Peruvian) sheet....	75@ 76	73@ 74	74@ 75
Caucho (Peruvian) ball....	82½@ 83	88@ 89	88@ 89

AFRICAN.

Sierra Leone, 1st qual. 104	@ 105
Massai, red.....	104 @ 105
Benguella.....	84½@ 85
Cameroon ball.....	76 @ 77
Accra flake.....	24 @ 25
Lopori ball, prime.....	115 @ 116
Lopori strip, prime.....	104 @ 105
Madagascar, pinky.....	97 @ 98
Ikelemba.....	116 @ 117

CENTRALS.

Esmeralda, sausage....	89@ 90
Guayaquil, strip.....	74@ 75
Nicaragua, scrap.....	88@ 89
Panama, slab.....	67@ 68
Mexican, scrap.....	88@ 89
Mexican, slab.....	65@ 66
Mangabeira, sheet.....	62@ 72
EAST INDIAN.	
Assam.....	100@101
Borneo.....	451@491

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	58700	Upriver, fine.....	78000
Islands, coarse.....	38100	Upriver, coarse.....	49900

Exchange, 16½d.

Last Manáos advices:

Upriver, fine.....	6875	Upriver, coarse.....	4875
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Exchange, 16¼d.

Statistics of Para Rubber (Excluding Cauchó).

NEW YORK.					
	Fine and Medium.	Coarse.	Total. 1906.	Total. 1905.	Total. 1904.
Stocks, January 31.....tons	217	7	224	157	64
Arrivals, February.....	1077	575	1652	1370	2527
Aggregating.....	1294	582	1876	1527	2591
Deliveries, February.....	943	575	1518	1391	2476
Stocks, February 28....	351	7	358	136	115
PARÁ.					
	1906.	1905.	1904.	1906.	1905.
Stocks, January 31.....tons	1460	1255	565	460	355
Arrivals, February.....	3150	3430	3680	1365	800
Aggregating.....	4610	4686	4245	1825	1155
Deliveries, February.....	3873	3876	3810	950	850
Stocks, February 28....	737	810	435	875	305
ENGLAND.					
	1906.	1905.	1904.	1906.	1905.
World's visible supply, February 28...tons	3685	3894	2867	1904	1904
Para Receipts, July 1 to February 28.	21,469	19,456	19,200		
Para Receipts of Cauchó, same dates.....	2845	2504	2304		
Afloat from Para to United States, Feb. 28.	745	1898	903		
Afloat from Para to Europe, February 28..	970	745	1024		

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The next important sale at Antwerp will take place on March 23 when 615 tons will be exposed. We mention some of the more important lots, with the broker's estimation, in francs per kilogram:

51 tons Uelé stripes.....	francs	11.30
35 " Aruwimi.....		11.80
20 " Upper Congo Yakoma.....		12.20
25 " Kasai Loanda Sankuru.....		10.80
12 " Congo Djuma I.....		9.50
17 " Congo Djuma II.....		8.25
10 " Congo Djuma III.....		7.00
16 " Upper Congo ball.....		12.20
19 " Mongalla small stripes.....		11.75
10 " red Mongalla.....		12.20

On March 16 small sale took place. Out of 15 tons only 3 tons were sold at firm prices, viz.: Upper Skoi large balls at 8.57½ francs (estimation 8.25); ditto small balls at 8.07½ francs (estimation 7.50).

C. SCHMID & CO. SUCCESEURS.

Antwerp, March 16, 1906.

[The prices obtained at the March 23 sale were uniformly higher than the broker's estimations; reported, in fact, at an average of about 25 centimes per kilo. It is understood that the greater part of the offerings were taken for European account.]

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots in cents per pound—show a decline from last month's quotations:

Old Rubber Boots and Shoes—Domestic.....	8½	@ 8½
Do —Foreign.....	7¼	@ 7¾
Pneumatic Bicycle Tires.....	7½	@ 7¼
Solid Rubber Wagon and Carriage Tires.....	8½	@ 8½
White Trimmed Rubber.....	10½	@ 11
Heavy Black Rubber.....	5¼	@ 5½
Air Brake Hose.....	3¼	@ 3¾
Fire and Large Hose.....	2¾	@ 3
Garden Hose.....	2¼	@ 2½
Matting.....	1¼	@ 1½

ANTWERP RUBBER STATISTICS FOR JANUARY.

DETAILS.	1906.	1905.	1904.	1903.	1902.
Stocks, Jan. 1. kilos	735,187	541,361	610,900	658,105	414,709
Arrivals in January..	605,029	325,081	522,259	171,860	636,243
Congo sorts.....	414,613	239,709	385,781	136,541	613,876
Other sorts.....	190,416	85,372	136,478	35,319	22,367
Aggregating.....	1,340,216	866,442	1,133,159	829,965	1,050,952
Sales in January.....	821,521	567,094	706,994	695,830	407,253
Stocks, Jan. 31.....	518,695	299,348	426,165	134,135	643,699
Arrivals since Jan. 1.	605,029	325,081	522,259	171,860	636,243
Congo sorts.....	414,613	239,709	385,781	136,541	613,876
Other sorts.....	190,416	85,372	136,478	35,319	22,367
Sales since Jan. 1.	821,521	567,094	706,994	695,830	407,253

ANTWERP RUBBER STATISTICS FOR FEBRUARY.

DETAILS.	1906.	1905.	1904.	1903.	1902.
Stocks, Jan. 31 kilos	518,695	299,348	426,165	134,135	643,699
Arrivals in February..	414,899	621,946	364,466	545,813	607,115
Congo sorts.....	338,905	496,318	290,901	473,713	587,293
Other sorts.....	75,994	125,628	73,565	72,100	19,822
Aggregating.....	933,594	921,294	790,631	679,948	1,250,814
Sales, February.....	318,906	363,894	455,541	204,410	265,994
Stocks, February 28.	614,688	557,400	335,090	475,538	984,820
Arrivals since Jan. 1.	1,019,928	947,027	886,725	717,673	1,243,158
Congo sorts.....	753,518	736,027	676,682	610,254	1,301,166
Other sorts.....	266,410	211,000	210,043	107,419	42,189
Sales since Jan. 1.	1,140,427	930,988	1,162,535	900,240	673,247

London.

EDWARD TILL & Co. report stocks [March 1]:

	1906.	1905.	1904.
Para sorts..... tons	—	—	—
Plantation, Ceylon and Straits.....	26	—	—
Borneo.....	45	11	16
Assam and Rangoon.....	7	2	4
Penang.....	285	120	—
Other sorts.....	191	149	207
Total.....	554	282	227
LIVERPOOL { Para sorts.....	873	304	386
{ Cauchó.....	128	201	65
{ Other sorts.....	351	477	458
Total, United Kingdom.....	1906	1264	1136
Total, February.....	1539	1298	1341
Total, January.....	—	—	—
Total, December.....	1728	1507	1185

PRICES PAID DURING FEBRUARY.

	1906.	1905.	1904.
Para, fine, hard.....	5/4 @ 5/4 5/3 @ 5/4 4/3 @ 4/4 4/6		
Do soft.....	5/3 4/5 @ 5/3 5/4 @ 5/3 4/3 @ 4/5		
Negroheads, scrappy 3/10 @ 4/4	3/11 @ 4/4	3/4 4/5 @ 3/5 5/8	
Do Cameta.....	3/3 3/1 @ 3/3 2/8 @ 2/10		
Bolivian.....	5/4 4/5 @ 5/4 5/3 @ 5/5 4/4 @ 4/6		
Cauchó, ball....	3/8 3/9 @ 3/3 3/4 @ 3/4 3/2 @ 3/3		
Do slab.....	3/1 @ 3/1 1/2 3/0 3/1 @ 3/1 2/9		
Do tails.....	No sales	3/0 3/2 @ 3/2	No sales

MARCH 16.—The market for Paras has been quiet during the week, but very firm and closes dearer. Only a small business has been done, owing to the scarcity of sellers. Fine hard has been sold at 5s. on the spot and at 5s. 5½d. for distant delivery. Soft fine at 5s. 3¼d. @ 5s. 4d. afloat and on the spot. Negroheads quiet; Manaoas 3s. 11d.; Islands 3s. 2d.; Cametas 3s. 3d. per pound values. Peruvian fine, no sales reported, but there are buyers at 5s. 4d. Sales of Ball at 3s. 9d. for April-May; scrappy in good demand at 3s. 10½d.; Slab quiet at 3s. 1½d. Medium grades in strong demand at to-day's auction, especially Madagascar and Penang. Madagascar white ball 4s. 2½d.; pinky 3s. 10½d. @ 3s. 11d.; black coated Majunga 3s. @ 3s. ¾d. Cartagena scrap 3s. 4½d. @ 3s. 6½d.; Ecuador scrap, 3s. 7d.; white virgin sheet 3s. 9½d.

CEYLON AND STRAITS PLANTATION.

LEWIS & PEAT report sales at the March 2 auction of Ceylon dark biscuits at 6s. 1½d. [= \$1.49½]; pale biscuits at the same price; fine scrap 5s. 3¼d.; inferior scrap, 4s. 11d.; Straits pale sheet 6s. 1¼d.; large pale biscuits 6s. 2d.; fair scrap 5s. 3½d. Ceará plantation from Ceylon very thin pale biscuits 6s. 1¼d. [= \$1.49½]; pale biscuits 6s. 1½d.; thin biscuits 6d.

At the March 16 auction good dark biscuits brought 6s. 3d. [= \$1.52]; scrap 5s. 3d. Ceará fine pale thin biscuits 6s. 3d. Straits and Malay States sheets as high as 6s. 3¼d.; scrap 5s. 3d.; good crepe 6s. 3d. The sale to-day included 44 cases (probably 4400 pounds) from the Vallambrosa Rubber Co., Limited, of Selangor, Federated Malay States, at 6s. 3d. @ 6s. 3¼d. The company were reported some time ago to expect to be able to gather 35,000 pounds in the year ending March 31.

Liverpool.

EDMUND SCHLÜTER & Co. report (February 28):

The market during February has been quiet with only small fluctuations in the value of Pará grades. Whereas the tendency of the value of fine in warehouse and for near delivery has been in favor of buyers (owing to the accumulation of supplies out of the large January receipts) there has been throughout the month a fair demand for distant deliveries.

WORLD'S VISIBLE SUPPLY OF PARAS, FEBRUARY 28.

	1906.	1905.	1904.	1903.	1902.
Tons.....	5280	3738	3569	4701	6013
Prices, hard fine..	5/4¼	5/5	4/6	3/9	3/-

LIVERPOOL STOCKS OF AFRICAN RUBBER, FEBRUARY 28.

1906.....	298	1903.....	355	1900.	595
1905.....	338	1902.....	536	1899.....	441
1904.....	346	1901.....	779	1898.....	395

WILLIAM WRIGHT & Co. report [March 1]:

Fine Pará.—The market has been very quiet with comparatively few fluctuations, the receipts this month will be under the estimate, and the fear that this may also occur again next month has had a strengthening effect on prices, and, at the same time, rendered sellers extremely cautious about selling far ahead. The demand in the Brazils continues extremely active, and all supplies are readily disposed of at full market rates; so far there is no indication of a break in prices. Market closes steady with little offering, closing prices being, Upriver spot 5s. 4¼d.; Islands, 5s. 3½d.; Upriver forward 5s. 4½d. near; 5s. 5d. distant.

Para Market.

R. O. AHLERS & Co. report [February 21]:

The demand, although steady throughout, has not been such as to maintain the former buoyancy of tone, and with diminishing activity prices have turned in buyers' favor. The market seems to have come to a temporary halt, due in some measure to too exacting pretensions of some of the larger holders of Upriver rubber, who by refusing to accompany the run of prices impeded the course of business. Their argument for staving off the opportunity of selling is that receipts will decrease rapidly, as the production of rubber has been disappointing in various districts and that the crop will fall short of expectations. In consequence of declining exchange and subsequent improvement in currency prices, holders have been more tractable of late.

R. O. AHLERS & Co., report [March 12]:

Since our last report our market has developed considerable activity in consequence of a sharp decline of exchange and a rising tendency in the home market, both circumstances helping sellers to obtain the high milreis price, which under last week's circumstances impeded all large transactions. The stock both in Sertão Islands is reduced now to 90 tons, for which still higher prices are asked. News arriving here from the Jurua and Upper Purus speak of an unusual early falling of water, and it is feared that many steamers will not be able to bring all the rubber down which is counted upon here, thus possibly causing an unexpected falling off in entries of March-April.

Rubber Receipts at Manaos.

DURING February and eight months of the crop season for three years [courtesy of Messrs. Scholz & Co.] :

FROM—	FEBRUARY.			JULY-FEBRUARY.		
	1906.	1905.	1904.	1906.	1905.	1904.
Rio Purus-Acre ... tons	1232	1049	1080	5978	4825	4931
Rio Madeira.....	614	411	297	2410	2291	2088
Rio Jurua.....	293	904	672	2512	2634	2782
Rio Javary—Iquitos...	109	233	273	2391	2288	2068
Rio Solimões.....	75	119	119	842	722	689
Rio Negro.....	128	167	91	413	506	351
Total.....	2451	2883	2532	14548	13266	12916
Cacho.....	817	811	517	2931	2553	2130
Total.....	3268	3694	3049	17479	15819	15046

Ceylon (Plantation) Rubber Exports, 1906.

DETAILS—BY WEEKS.

	POUNDS.		POUNDS.
Week ending Jan. 8.....	Week ending Feb. 19....	5,756
Week ending Jan. 15....	2,536		
Week ending Jan. 22....	1,527	Total, 1906.....	38,521
Week ending Jan. 29....	9,024	Total, 1905.....	8,694
Week ending Feb. 5....	9,002	Total, 1904....	10,492
Week ending Feb. 12....	10,676	Total, 1903.....	6,799

DESTINATION.

Great Britain.....	30,833	United States.....	2,687
Germany.....	4,781	Belgium.....	220

Bordeaux.

THE market has been very firm since the middle of last month. There is an upward tendency since a few days, specially for the fine African sorts, viz.: Conakry and Soudan niggers, for which there is an increase of 20 to 30 centimes per kilogram over the prices ruling at the end of 1905. Imports at Bordeaux since February 15 have been 244 tons from West Africa and 24 tons from Central America.

SALES AND QUOTATIONS (FRANCS PER KILO).

28,250 kilos,	Conakry niggers—selections 12; Boké 11.70@11.90.
87,800 "	Soudan—twists 9.85@10.65; niggers 10.85@11.
11,970 "	Ivory Coast—Bassam lumps and cakes 6.90; niggers 8.90.
"	" Lahou twists 8.90@10.15; niggers 8.85@10.90.
5,000 "	Congo (Bas.) Setté Cama 4.25@7.65; Mayumba 6.50@7.85.
8,600 "	" Sangha 10.35@11.
7,670 "	Madagascar—Majunga 7.65@8.85; Tamatave 9.15@10.15.
2,800 "	Colombian—scraps 9.25@10.15; slabs 8.25
1,100 "	Guayaquil—9.45@10.15.
4,200 "	Guatemala—slabs 8.15@8.35.
3,100 "	Mexican—scrap 9.45@9.65; slabs 7.45@8.10.
510 "	Manicoba—8.85@9.65.

ROBERT LAFON.

Bordeaux, March 12, 1906.

INCREASE OF BORDEAUX RUBBER IMPORTS.

1899.....	kilos	175,589	1903....	kilos	1,113,000
1900.....		239,532	1904.....		1,182,703
1901.....		235,380	1905.....		1,330,480
1902.....		678,000			

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

March 7.—By the steamer Polycarp, from Manaoas and Pará:		IMPORTERS,				Total.
		Fine.	Medium.	Coarse.	Cacho.	
N. Y. Commercial Co..	198,600	31,600	116,900	18,900	—	366,000
Poel & Arnold.....	136,300	65,000	132,100	47,400	—	380,800
General Rubber Co..	185,500	42,200	32,400	58,000	—	318,100
A. T. Morse & Co....	185,900	30,100	63,500	6,400	—	285,900
Neale & Co.....	54,100	18,300	102,200	600	—	175,200
Hagemeyer & Brunn..	36,300	1,700	37,900	—	—	75,900
Edmund Reeks & Co.	19,300	5,500	19,000	—	—	43,800
C. P. dos Santos.....	21,500	7,300	2,600	—	—	31,400
G. Amsinck & Co....	200	—	1,300	—	—	1,500
Total.....	837,700	201,700	507,900	131,300	—	1,678,600

March 20.—By the steamer *Cearense*, from Manáos and Pará:

N. Y. Commercial Co.	148,200	43,900	34,400	51,800	278,300
General Rubber Co.	101,200	32,500	48,700	13,900	196,300
Poel & Arnold.	11,200	66,000	113,700	1,200	192,100
C. P. dos Santos.	49,500	18,500	40,900	6,400	115,300
Neale & Co.	38,000	8,400	27,800		74,200
A. T. Morse & Co.	700		21,100	43,900	65,700
Hagemeyer & Brunn.	16,600	2,200	14,100		32,900
Edmund Reeks & Co.	14,300	3,600	4,100		22,800
Lawrence Johnson & Co.	13,900	3,300	800		18,000
F. R. Muller & Co.			6,900		6,900
Arana, Bergman & Co.				40,000	40,000

Total..... 393,600 178,400 312,500 157,200=1,041,700

March 26.—By the steamer *Fluminense*, from Manáos and Pará:

A. T. Morse & Co.	82,700	22,400	55,500	85,000	245,600
N. Y. Commercial Co.	55,300	13,800	108,600	1,300	179,000
Poel & Arnold.	7,100	8,200	81,700	24,000	141,000
Neale & Co.	31,500	6,300	56,200	3,900	97,900
General Rubber Co.	31,700	8,400	9,400	27,800	77,300
Hagemeyer & Brunn.	18,000	2,500	37,200		57,700
Edmund Reeks & Co.	14,200	1,200	36,800		52,200
F. R. Muller & Co.			7,600		7,600
Czarnikow, McDougal Co.	5,400	1,600	800		7,800
Lawrence Johnson & Co.			2,700		2,700

Total..... 245,900 84,400 396,500 142,000= 868,800

[NOTE.—The steamer *Dunstan* from Pará, is due at New York, April 4, with 350 tons Rubber and 70 tons Cauchó.

PARA RUBBER VIA EUROPE.

FEB. 23.—By the <i>Cedric</i> =Liverpool:	
Poel & Arnold (Cauchó).....	15,000
FEB. 24.—By the <i>Campania</i> =Liverpool:	
New York Commercial Co. (Fine).....	3,300
MARCH 24.—By the <i>Bovic</i> =Liverpool:	
Poel & Arnold (Coarse).....	5,500

OTHER ARRIVALS AT NEW YORK

CENTRALS.

FEB. 24.—By the <i>Financé</i> =Colon:	
Hirzel, Feltman & Co.	18,000
Mann & Emdon.	3,300
FEB. 24.—By the <i>Maine</i> =London:	
General Rubber Co.	4,500
FEB. 24.—By the <i>Yucatan</i> =Mexico:	
Harburger & Stack	2,500
H. Marquardt & Co.	2,500
Graham, Hinkley & Co.	1,500
Thebaud Brothers.	500
FEB. 26.—By the <i>Victoria</i> =Liverpool:	
Poel & Arnold.	7,000
George A. Alden & Co.	7,000
FEB. 28.—By the <i>Siberia</i> =Colombia:	
Kunhardt & Co.	4,000
Isaac Brandon & Bros.	3,000
Pedro Lopez.	2,000
Roldan & Van Sickle.	1,000
Aramburo & Sons.	1,000
John Boyd & Co.	500
A. D. Straus & Co.	500
FEB. 28.—By the <i>Civic</i> =Liverpool:	
George A. Alden & Co.	20,000
MAR. 1.—By the <i>Tenonic</i> =Liverpool:	
George A. Alden & Co.	40,000
MAR. 2.—By the <i>Colorado</i> =Mobile:	
A. T. Morse & Co.	20,000
MAR. 2.—By the <i>Orinoco</i> =Greytown:	
G. Amsinck & Co.	6,500
E. B. Strout.	5,500
J. A. Medina Co.	4,000
Eggers & Heinlein.	3,500
Meyer Hecht.	2,500
Wesels & Kulemkap.	2,500
Aramburo & Sons.	1,500
Silva Bussenas & Co.	1,500
Andreas & Co.	1,500
Seanz & Co.	1,500
MAR. 3.—By the <i>Esperanza</i> =Mexico:	
Harburger & Stack.	3,000
E. Steiger & Co.	2,500
E. N. Libbals Co.	500
American Trading Co.	500
MAR. 5.—By the <i>Advance</i> =Colon:	
Hirzel, Feltman & Co.	16,500
International Sewing Machine Co.	4,500
George A. Alden & Co.	1,500
MAR. 5.—By the <i>Venetia</i> =Greytown:	
E. B. Strout.	5,000
G. Amsinck & Co.	5,000
W. Louisa & Co.	1,000
A. Rosenthal & Sons.	1,000
H. W. Peabody & Co.	1,000
MAR. 5.—By the <i>Malanza</i> =Tampico:	
New York Commercial Co.	25,000
Edward Maurer.	12,000
Graham, Hinkley & Co.	2,500

CENTRALS—Continued

MAR. 6.—By the <i>Prins Aug. Wm.</i> =Colombia:	
American Trading Co.	2,000
Isaac Brandon & Bros.	2,500
Joaquin Ferro.	1,500
A. Held.	1,000
G. Amsinck & Co.	1,000
R. Fabien & Co.	500
A. D. Straus & Co.	500
MAR. 7.—By the <i>Rio Grande</i> =Mobile:	
A. T. Morse & Co.	2,000
Manhattan Rubber Mfg. Co.	1,000
Eggers & Heinlein.	500
Barling & DeLeon.	500
MAR. 10.—By the <i>Seneca</i> =Tampico:	
Continental & Mexico Co.	7,000
Fred Probst & Co.	1,000
Graham, Hinkley & Co.	700
L. N. Chemedlin & Co.	500
MAR. 12.—By the <i>Panama</i> =Colon:	
Hirzel, Feltman & Co.	10,500
Roldan & Van Sickle.	5,000
G. Amsinck & Co.	4,000
Piza, Nephews & Co.	2,000
Mann & Emdon.	2,500
Dumarest Bros. & Co.	2,500
A. Santos & Co.	2,500
Laurence Johnson & Co.	1,500
MAR. 12.—By the <i>Titan</i> =Bahia:	
Hirsch & Kaiser.	30,000
J. H. Rossbach & Bros.	13,000
A. D. Hitch & Co.	11,000
Lawrence Johnson & Co.	3,000
American Commercial Co.	3,000
MAR. 14.—By the <i>Bleucher</i> =Hamburg:	
Rubber Trading Co.	18,000
General Rubber Co.	11,500
MAR. 15.—By the <i>Proteus</i> =New Orleans:	
A. T. Morse & Co.	2,000
Manhattan Rubber Mfg. Co.	1,500
G. Amsinck & Co.	1,500
MAR. 15.—By the <i>City Washington</i> =Tampico:	
Edward Maurer.	45,000
New York Commercial Co.	4,000
MAR. 15.—By the <i>Tagus</i> =Caribbean:	
G. Amsinck & Co.	2,500
A. Held.	2,000
A. M. Capens Sons.	2,000
Roldan & Van Sickle.	1,000
Seanz & Co.	800
Eggers & Heinlein.	700
Mecke & Co.	500
Isaac Brandon & Bros.	500
MAR. 16.—By the <i>Armenian</i> =Liverpool:	
Poel & Arnold.	11,500
MAR. 17.—By the <i>Seguranca</i> =Mexico:	
E. Steiger & Co.	1,500
Harburger & Stack.	5,500
H. Marquardt & Co.	2,500
Langman & Kemp.	500
MAR. 19.—By the <i>Alianza</i> =Colon:	
Hirzel, Feltman & Co.	5,000
G. Amsinck & Co.	4,500
Central American Commercial Co.	1,000
R. G. Barthold.	1,000
Laurence Johnson & Co.	500
MAR. 20.—By the <i>Alleghany</i> =Colombia:	
Isaac Brandon & Bros.	3,000
Kunhardt & Co.	1,500
A. A. Lindo & Co.	1,000
Roldan & Van Sickle.	1,000
G. Amsinck & Co.	800
American Trading Co.	700

CENTRALS—Continued.

MAR. 21.—By the <i>Sabine</i> =Mobile:	
A. N. Rotholz & Co.	2,000
MAR. 23.—By the <i>Financé</i> =Colon:	
Hirzel, Feltman & Co.	10,000
Mann & Emdon.	9,000
De Sola & Pardo.	2,500
F. Rosenstein & Co.	2,000
Audean Trading Co.	500
Barling & De Leon.	500
MAR. 24.—By the <i>Bovic</i> =Liverpool:	
Poel & Arnold.	22,500
George A. Alden & Co.	1,500
MAR. 24.—By the <i>Yucatan</i> =Mexico:	
Harburger & Stack.	3,500
E. Steiger & Co.	2,000
Graham, Hinkley & Co.	2,500
Joseph Ware.	500
E. N. Tabbals & Co.	500
FEB. 23.—By the <i>Cedric</i> =Liverpool:	
George A. Alden & Co.	25,000
Poel & Arnold.	12,500
FEB. 26.—By the <i>La Touraine</i> =Havre:	
George A. Alden & Co.	60,000
A. T. Morse & Co.	5,000
FEB. 26.—By the <i>Victorian</i> =Liverpool:	
General Rubber Co.	56,000
George A. Alden & Co.	40,000
Poel & Arnold.	45,000
A. T. Morse & Co.	16,000
FEB. 27.—By the <i>Finland</i> =Antwerp:	
A. T. Morse & Co.	4,000
FEB. 28.—By the <i>Civic</i> =Liverpool:	
George A. Alden & Co.	13,500
Poel & Arnold.	9,000
Rubber Trading Co.	4,500
MAR. 1.—By the <i>Tenonic</i> =Liverpool:	
George A. Alden & Co.	86,000
A. T. Morse & Co.	23,000
General Rubber Co.	15,000
A. W. Bunn.	13,000
Poel & Arnold.	13,000
Rubber Trading Co.	11,000
MAR. 2.—By the <i>Pennsylvania</i> =Hamburg:	
A. T. Morse & Co.	40,000
Rubber Trading Co.	6,000
Earle Brothers.	2,000
MAR. 5.—By the <i>Carmania</i> =Liverpool:	
George A. Alden & Co.	28,000
A. W. Brunn.	3,000
Poel & Arnold.	2,500
MAR. 6.—By the <i>Vaderland</i> =Antwerp:	
George A. Alden & Co.	147,000
A. T. Morse & Co.	48,000
Joseph Cantor.	18,000
MAR. 9.—By the <i>Baltic</i> =Liverpool:	
General Rubber Co.	35,000
George A. Alden & Co.	5,000
MAR. 10.—By the <i>La Lorraine</i> =Havre:	
George A. Alden & Co.	9,000
Henry A. Gould Co.	7,000
MAR. 13.—By the <i>Kroonland</i> =Antwerp:	
Joseph Cantor.	20,000
A. T. Morse & Co.	15,000
MAR. 14.—By the <i>Bleucher</i> =Hamburg:	
A. T. Morse & Co.	8,000
George A. Alden & Co.	5,500
Poel & Arnold.	3,500

AFRICANS—Continued.

MAR. 16.—By the <i>Armenian</i> =Liverpool:	
George A. Alden & Co.	45,000
Poel & Arnold	30,000
General Rubber Co.	44,500
A. T. Morse & Co.	3,500
Earle Brothers	3,500
A. W. Brunn	2,500 131,000
MAR. 19.—By the <i>Peninsular</i> =Lisbon:	
General Rubber Co.	115,000
MAR. 19.—By the <i>Umbria</i> =Liverpool:	
George A. Alden & Co.	33,000
MAR. 21.—By the <i>Zeeand</i> =Antwerp:	
General Electric Co.	9,000
A. W. Brunn	11,500 20,500
MAR. 23.—By the <i>Cedric</i> =Liverpool:	
George A. Alden & Co.	65,000
Poel & Arnold	40,000
A. T. Morse & Co.	20,000
General Rubber Co.	11,500 136,500
MAR. 24.—By the <i>Bovic</i> =Liverpool:	
Poel & Arnold	45,000
A. T. Morse & Co.	25,000
George A. Alden & Co.	3,000
A. W. Brunn	7,000 82,000

EAST INDIAN.

FEB. 23.—By the <i>Maine</i> =London:	
George A. Alden & Co.	22,500
Rubber Trading Co.	2,500 25,000
FEB. 26.—By the <i>Minnehaha</i> =London:	
Hagemeyer & Brunn	5,500
C. Von Postau & Co.	2,500 8,000
FEB. 26.—By the <i>Ghaazee</i> =Singapore:	
Heabler & Co.	22,500
George A. Alden & Co.	11,500
Poel & Arnold	15,000
Pierre T. Betts	25,000
A. W. Brunn	15,000
Winter & Smillie	10,000 99,000
MAR. 7.—By the <i>Minneapolis</i> =London:	
A. T. Morse & Co.	6,500
George A. Alden & Co.	4,500 11,000
MAR. 9.—By the <i>Indrani</i> =Singapore:	
Heabler & Co.	4,000
J. A. Pauli & Co.	5,500
Winter & Smillie	5,500 15,000
MAR. 22.—By the <i>Mesaba</i> =London:	
A. T. Morse & Co.	13,500
George A. Alden & Co.	6,500
H. W. Peabody & Co.	2,500
Poel & Arnold	1,500 24,000

EAST INDIAN.—Continued.

MAR. 23.—By the <i>Schoenfels</i> =Colombo:	
George A. Alden & Co.	1,500
A. T. Morse & Co.	1,000 2,500

GUTTA-JELUTONG.

FEB. 26.—By the <i>Ghaazee</i> =Singapore:	
Heabler & Co.	250,000
L. Littlejohn & Co.	225,000
George A. Alden & Co.	100,000
Poel & Arnold	135,000 700,000

MAR. 9.—By the <i>Indrani</i> =Singapore:	
Heabler & Co.	750,000
L. Littlejohn & Co.	225,000
George A. Alden & Co.	225,000
Pierre T. Betts	35,000 1,235,000

GUTTA-PERCHA AND BALATA.

FEB. 26.—By the <i>Ghaazee</i> =Singapore:	
Poel & Arnold	5,500
MAR. 1.—By the <i>Kaiser Wilhelm</i> =Bremen:	
In Transit	21,000
MAR. 5.—By the <i>La Gascoyne</i> =Havre:	
George A. Alden & Co.	4,500
MAR. 9.—By the <i>Indrani</i> =Singapore:	
J. A. Pauli & Co.	5,500

BALATA.

FEB. 26.—By the <i>Maracas</i> =Bolivar:	
Middleton & Co.	1,500
MAR. 1.—By the <i>British King</i> =Antwerp:	
C. P. dos Santos	4,500
MAR. 21.—By the <i>Statendam</i> =Rotterdam:	
Earle Brothers	15,500
MAR. 22.—By the <i>Mesaba</i> =London:	
George A. Alden & Co.	11,500
MAR. 24.—By the <i>Prins William</i> =Lucerne:	
R. B. Masquita	1,000

CUSTOM HOUSE STATISTICS

PORT OF NEW YORK—FEBRUARY.

Imports:	Pounds.	Value.
India-rubber	6,470,704	\$5,149,986
Gutta-percha	33,355	19,401
Gutta jelutong (Pontianak)	1,245,802	44,415
Total	7,769,861	\$5,213,802

Exports:

India-rubber	49,725	\$ 36,151
Reclaimed rubber	64,047	9,818
Rubber scrap imported	982,867	\$ 46,727

BOSTON ARRIVALS.

	POUNDS.
JAN. 2.—By the <i>Saxonian</i> =Liverpool:	
George A. Alden & Co.—Central	3,770
JAN. 2.—By the <i>Geogian</i> =London:	
George A. Alden & Co.—East Indian	3,237
JAN. 3.—By the <i>Sagamore</i> =Liverpool:	
George A. Alden & Co.—Central	7,339
JAN. 3.—By the <i>Sagamore</i> =Liverpool:	
Poel & Arnold—African	10,915
JAN. 5.—By the <i>Cestrian</i> =Liverpool:	
George A. Alden & Co.—African	3,199
JAN. 8.—By the <i>Sylvanian</i> =Liverpool:	
George A. Alden & Co.—African	6,691
JAN. 9.—By the <i>Southwark</i> =Antwerp:	
George A. Alden & Co.—African	9,303
JAN. 9.—By the <i>Cymric</i> =Liverpool:	
Poel & Arnold—African	1,533
JAN. 10.—By the <i>Devonian</i> =Liverpool:	
George A. Alden & Co.—Coarse Para	47,581
JAN. 15.—By the <i>Philadelphian</i> =London:	
Poel & Arnold—Central	71,849
JAN. 16.—By the <i>Philadelphian</i> =London:	
George A. Alden & Co.—East Indian	2,085
JAN. 16.—By the <i>Devonian</i> =Liverpool:	
George A. Alden & Co.—African	9,008
JAN. 23.—By the <i>Artemisia</i> =Hamburg:	
George A. Alden & Co.—African	7,372
Poel & Arnold—African	19,634 19,896
JAN. 27.—By the <i>Anglian</i> =London:	
George A. Alden & Co.—East Indian	715
JAN. 29.—By the <i>Oakmore</i> =Rotterdam:	
George A. Alden & Co.—African	13,244
JAN. 29.—By the <i>Sachem</i> =Liverpool:	
Poel & Arnold—African	6,304
Total	216,598

[Value, \$176,767]

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
January, 1906	6,458,513	403,846	6,049,667	January, 1906	4,221,168	3,368,512	852,656
January, 1905	7,418,006	214,294	7,203,712	January, 1905	5,160,176	3,107,552	2,052,624
January, 1904	4,982,409	235,498	4,746,911	January, 1904	4,628,064	3,225,046	1,403,018
January, 1903	5,881,341	191,006	5,690,335	January, 1903	5,278,784	4,229,344	1,049,440
January, 1902	6,273,939	172,106	6,101,833	January, 1902	4,702,208	2,995,200	1,737,008
GERMANY.				BELGIUM.*			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
January, 1906	4,221,140	1,218,580	3,002,560	January, 1906	2,048,757	651,649	1,397,108
January, 1905	3,427,820	1,242,120	2,185,700	January, 1905	1,346,376	560,859	785,517
January, 1904	2,832,500	696,300	2,136,200	January, 1904	1,379,356	895,228	484,128
January, 1903	3,012,020	1,161,360	1,850,660	January, 1903	1,252,405	275,112	977,293
January, 1902	2,581,920	1,056,000	1,525,920	January, 1902	1,844,141	741,541	1,102,600
FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
January, 1906	2,488,640	1,249,380	1,239,260	January, 1906	249,480	440	249,040
January, 1905	2,220,020	531,300	1,688,720	January, 1905	231,660	660	231,000
January, 1904	805,860	728,860	77,000	January, 1904	243,100	2,640	240,460
January, 1903	1,021,020	873,400	147,620	January, 1903	260,920	220	260,700
January, 1902	1,602,480	448,360	1,154,120	January, 1902	223,960	220	223,740

NOTE.—German statistics include Gutta-Percha, Balata, old (waste) rubber, and substitutes. British figures include old rubber. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

*General Commerce.

†Special Commerce.

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R. GEORGE E. HEYL-DIA, formerly Chief Chemist and Managing Engineer of W. T. Glover & Co.'s works at Salford, Manchester, England, founder and managing director of the St. Helens Cable Co., etc., begs to announce to the American Rubber trade that he has equipped a Laboratory for Analyses and Tests, and may be seen at Nos. 95-97 Liberty St., Room 404, N. Y., by appointment. Problems in Rubber Analysis, Vulcanization, Factory Engineering, Substitutes, and Processes successfully solved. Advice as to factory and net costs given. Correspondence invited.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Liverpool Rubber Co., Ltd., Liverpool.
National India Rubber Co., Bristol, B.I.

Card Cloths.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, B.I.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Carriage Mats.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Voorhees Rubber Mfg. Co., Jersey City

Cord (Pure Rubber).

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Deckle Straps.

Boston Belting Co., Boston.
B. F. Goodrich Co., Akron, O.
Liverpool Rubber Co., Liverpool, Eng.
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Door Springs.

Hodgman Rubber Co., New York.

Dredging Sleeves.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City.
Republie Rubber Co., Youngstown, O.

Force Cups.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Fruit Jar Rings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
Manhattan Rubber Mfg. Co., New York.
Republie Rubber Co., Youngstown, Ohio.
New York Belting & Packing Co., N. Y.

Fuller Balls.

B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republie Rubber Co., Youngstown, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Liverpool Rubber Co., Liverpool, Eng.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago, Ill.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Liverpool Rubber Co., Liverpool, Eng.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.

Gas Bags (Rubber)—Continued.

Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Gasket Tubing.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, O.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Chicago.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Home Rubber Co., Trenton, N. J.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Hose—Armored.

Hose—Wire Wound.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Electric Hose & Rubber Co., Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Chas. Macintosh & Co., Ltd., Manchester, England.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Hose Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Hose Linings.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston.

Hose—Protected.

Boston Belting Co., Boston-New York.
Gutta Percha & Rubber Mfg. Co., N. Y.
Electric Hose & Rubber Co., Wilmington, Del.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

COTTON AND LINEN.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.

COTTON AND LINEN.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Co., New York.
Eureka Rubber Mfg. Co. of Trenton.
Fabric Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha and Rubber Mfg. Co. of Toronto.
Home Rubber Co., Trenton, N. J.

Hose—Rubber Lined.—Continued.

Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Boston Belting Co., Boston-New York.
Electric Hose & Rubber Co., Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.

"Jenkins '96" Packing.

Jenkins Bros., New York.

Lawn Sprinklers.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston New York.

Mould Work.

[See Mechanical Rubber Goods.]

Boston Woven Hose & Rubber Co.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Mattson Rubber Co., New York.
Mitzel Rubber Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

"Nubian" Packing.

Voorhees Rubber Mfg. Co., Jersey City

Oil Well Supplies.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City

Paper Machine Rollers.

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Peerless Rubber Mfg. Co., New York.
Voorhees Rubber Mfg. Co., Jersey City

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Republie Rubber Co., Youngstown, O.

Pump Valves.

[See Mechanical Rubber Goods.]

Jenkins Bros., New York.
National India Rubber Co., Bristol, R. I.

Rollers—Rubber Covered.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston New York.

Sewing Machine Rubbers.

B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hardman Rubber Co., Belleville, N. J.
Liverpool Rubber Co., Liverpool, Eng.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republie Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Liverpool Rubber Co., Liverpool, Eng.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republie Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston.

Tiling.

Canadian Rubber Co. of Montreal, Ltd.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republie Rubber Co., Youngstown, Ohio.
Voorhees Rubber Mfg. Co., Jersey City.

Tires.

AUTOMOBILE, BICYCLE, AND CARRIAGE.
Canadian Rubber Co. of Montreal, Ltd.
Continental Caoutchouc & Gutta-percha Co., Hanover.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Fisk Rubber Co., Chillicothe Falls, Mass.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., Toronto.
Healy Leather Tire Co., New York.
Kokomo Rubber Co., Kokomo, Ind.
Lake Shore Rubber Co., Erie, Pa.
Liverpool Rubber Co., Liverpool, Eng.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
North British Rubber Co., Ltd., Edinburgh.
Plymouth Rubber Co., Stoughton, Mass.
Republie Rubber Co., Youngstown, O.

AUTOMOBILE AND CARRIAGE.

Boston Belting Co., Boston-New York.
Eureka Rubber Mfg. Co., Trenton, N. J.
Revere Rubber Co., Boston-New York.

Tubing.

[See Mechanical Rubber Goods.]

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Valve Balls.—Continued.

Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Valve Discs.

American Hard Rubber Co., New York
Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Valves.

[See Mechanical Rubber Goods.]

Jenkins Bros., New York-Chicago.
National India Rubber Co., Bristol, R. I.

Vulcanite Emery Wheels.

Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co. Ltd., New York.

Wringer Rolls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES

Atomizers.

Bandages.

Bulbs.

Syringes.

Water Bottles.

Druggists' Sundries—General.

American Hard Rubber Co., New York.
G. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Est. of Jos. Bacharach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Mitsel Rubber Co., Akron, O.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Balloons.

King & Leatherow, Newark, N. J.

Balls, Dolls and Toys.

Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Guttapercha Co.
B. F. Goodrich Co., Akron, O.
New York Rubber Co., New York.

Combs.

American Hard Rubber Co., New York.

Elastic Bands.

Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Mattison Rubber Co., New York.

Finger Cots.

Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barborton, O.

Gloves.

Canadian Rubber Co. of Montreal.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
King & Leatherow, Newark, N. J.
National India Rubber Co., Bristol, R. I.
Pure Gum Specialty Co., Barborton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Daval Rubber Co., Providence, R. I.
Hardman Rubber Co., Belleville, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.

Est. of Jos. Bacharach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
National India Rubber Co., Bristol, R. I.
Pure Gum Specialty Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Nipples.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

Shower Bath Sprinklers.

A. Schrader's Son, Inc., New York.

Sponges (Rubber).

Faultless Rubber Co., Ashland, Ohio.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stopples (Rubber).

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
A. Schrader's Son, Inc., New York.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS

Air Goods (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Daval Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.

Calendering.

La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Sureka Rubber Mfg. Co. of Trenton.
Gutta Percha & Rubber Mfg. Co., Toronto.
National India Rubber Co., Bristol, R. I.

Clothing.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Apparatus.

A. Schrader's Son, Inc., New York.

Diving Dresses.

Hodgman Rubber Co., New York.

Dress Shields.

Mattison Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.

[See Clothing.]

Proofing.

Canadian Rubber Co. of Montreal.
La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.

Cravenette Co., Ltd.

Rubber Coated Cloths.

Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR

Boots and Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Alfred Gaimon, Ltd., Hamburg, Germany.
Canadian Rubber Co. of Montreal.
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Liverpool Rubber Co., Liverpool, Eng.
Lycorning Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.

Boots and Shoes.—Continued.

National India Rubber Co., Boston.
North British Rubber Co., Ltd., Edinburgh.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Guttapercha Co., Hanover.
Grieb Rubber Co., Trenton, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Springfield Elastic Tread Co., Springfield, Ohio.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Granby Rubber Co., Granby, Quebec.
La Crosse Rubber Mills Co., La Crosse, Wis.
Liverpool Rubber Co., Liverpool, Eng.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER

Dental Gum.

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattison Rubber Co., New York.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL

Electrical Supplies.

American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Massachusetts Chemical Co., Boston.
Tyer Rubber Co., Andover, Mass.

Friction Tape.

Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Rubber Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Joseph Stokes Rubber Co., Trenton, N. J.

Insulating Compounds.

Canadian Rubber Co. of Montreal.
Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.

National India Rubber Co., Providence.

Splicing Compound.

Home Rubber Co., Trenton, N. J.

RUBBER BUYERS' DIRECTORY—CONTINUED.

SPORTING
GOODS

Foot Balls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Golf Balls.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Submarine Outfits.

Hodgman Rubber Co., New York.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyler Rubber Co., Andover, Mass.

Striking Bags.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

MISCELLANEOUS

Boiler Specialist.

H. W. Jones, New York.

Cement (Rubber).

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Hadley, Cement Co., Lynn, Mass.
Manhattan Rubber Mfg. Co., New York
N. J. Car Spring & Rubber Co., Jersey
City, N. J.
New York Belting & Packing Co., N. Y.

Chemical Analyses.

Durand Woodman, Ph. D., New York.
H. L. Terry, Manchester, England.

Chemists.

Stephen P. Sharples, Boston, Mass.
Durand Woodman, Ph. D., New York.

Engraver.

P. C. Smith, Boston, Mass.

Laboratory—Tests, Analyses.

G. E. Heyl-Dia, New York.

Rubber Journals.

Gummi-Zeitung, Dresden, Germany.

Rubber Tree Seeds.

J. P. William & Bros., Heneratgoda,
Ceylon.

Typewriters.

Remington Typewriter Co., New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER
MACHINERY

Acid Tanks.

Birmingham Iron Foundry, Derby, Ct.

Band Cutting Machine.

A. Adamson, Akron, O.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Belt Folding Machines.

Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Slitters.

Cloth Dryers.

Gearing.

Shafting.

Wrapping Machines.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Stretchers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Hoggson & Pettis Mfg. Co., New Haven.

Boilers.

William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton,
N. J.

Braiders.

New England Butt Co., Providence, R. I.

Buckles.

The Weld Mfg. Co., Boston.

Cabling Machinery.

Alton Machine Co., New York.

Calenders.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Chucks (Lathe).

Hoggson & Pettis Mfg. Co., New Haven.

Churns.

American Tool & Machine Co., Boston.

Clutches.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Crackers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Devolcanizers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Edred W. Clark, Hartford, Ct.
William E. Thropp, Trenton, N. J.

Dies.

John J. Adams, Worcester, Mass.
Barbour Bros., Trenton, N. J.
T. J. Beaudy, Marlboro, Mass.
Brookton Die Co., Brookton, Mass.
J. W. Dewees, Philadelphia, Pa.
Hoggson & Pettis Mfg. Co., New Haven.
Independent Die Co., Brookton, Mass.

Doubling Machines.

American Tool & Machine Co., Boston.

Drying Apparatus.

American Process Co., New York.

Drying Machines.

Alton Machine Co., New York.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.

Textile-Finishing Machinery Co., Providence, R. I.

Engines, Steam.

Alton Machine Co., New York.
William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton,
N. J.

Engraving Roll.

Hoggson & Pettis Mfg. Co., New Haven.

Grinders and Mixers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Hangers.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Hose Machines.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.

Birmingham Iron Foundry, Derby, Ct.

Hydraulic Machinery.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Insulating Machinery.

Iron Castings.

Alton Machine Co., New York.

Lasts (Rubber Shoe).

Middlesex Last Co., Boston.

Lathes—Hard Rubber.

A. Adamson, Akron, Ohio.

Lathes—Jar Ring.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
William R. Thropp, Trenton, N. J.

Machinists' Tools.

Hoggson & Pettis Mfg. Co., New Haven.

Moulds.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
W. E. Arnold, Malden, Mass.
Barbour Bros., Trenton, N. J.

Moulds—Continued.

Birmingham Iron Foundry, Derby, Ct.
J. W. Dewees, Philadelphia, Pa.
Hoggson & Pettis Mfg. Co., New Haven.

Pillow Blocks.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Presses (for Rubber Work.)

A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse,
N. Y.
Edred W. Clark, Hartford, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Pumps.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Racks for Boot and Shoe Cars.

Hoggson & Pettis Mfg. Co., New Haven.

Reducing Valves.

Mason Regulator Co., Boston.

Rollers (Hand).

Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.

Alton Machine Co., New York.

New England Butt Co., Providence, R. I.

Separators.

Turner, Vaughn & Taylor Co., Cuyahoga
Falls, Ohio.

Separators for Reclaimed Rubber.

American Process Co., New York.

Special Rubber Machinery.

Alton Machine Co., New York.
Wellman Sole Cutting Machine Co.,
Medford, Mass.

Spreaders.

Alton Machine Co., New York.

American Tool & Machine Co., Boston.

Birmingham Iron Foundry, Derby, Ct.

New England Butt Co., Providence, R. I.

Steam Traps and Specialties.

Jenkins Bros., New York.

Mason Regulator Co., Boston.

Osgood Sayen, Philadelphia, Pa.

Steel Stamps.

Hoggson & Pettis Mfg. Co., New Haven.

Stitchers (Hand).

Hoggson & Pettis Mfg. Co., New Haven.

Strip Covering Machines.

Alton Machine Co., New York.

New England Butt Co., Providence, R. I.

Tire Molds.

Bay State Machine Co., Erie, Pa.

Tubing Machines.

A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Edred W. Clark, Hartford, Ct.
John Royle & Sons, Paterson, N. J.

Vacuum Drying Chambers.

Alton Machine Co., New York.
Joseph P. Devine, Buffalo, N. Y.

Varnishing Machines.

Birmingham Iron Foundry, Derby, Ct.

Vulcanizers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton,
N. J.

Washers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.
Turner, Vaughn & Taylor Co., Cuyahoga
Falls, Ohio.

Wire Insulating Machines.

Alton Machine Co., New York.

New England Butt Co., Providence, R. I.

Wire Rope Machinery.

Alton Machine Co., New York.

SECOND-HAND
MACHINERY.

W. C. Coleman Co., Rochelle Park, N. J.
Philip McGrory, Trenton, N. J.
M. Norton & Co., Charlestown, Mass.

FACTORY
SUPPLIES

Acid (Carbolic).

Barrett Mfg. Co., Philadelphia.

Antimony, Sulphurets of.

GOLDEN.

Action-Ges. Georg Kestorff's Salz-
werke, Linden, Germany.
Atlas Chemical Co., Newtonville, Mass.

GOLDEN AND CRIMSON.

Joseph Cantor, New York.
Geo. F. Lufbery, Jr., Elizabeth, N. J.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Type & King, London, England.

Balata.

George A. Alden & Co., Boston.

Benzol.

Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.

Joseph Cantor, New York.
William H. Scheel, New York.
Type & King, London, England.

Boxes (Wood).

Henry H. Sheip & Co., Philadelphia.

Brass Fittings.

A. Schrader's Son, Inc., New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS—CONTINUED.

<p>Carbon Bisulphide. George W. Speaight, New York.</p> <p>Caustic Soda. Acker Process Co., Niagara Falls, N. Y.</p> <p>Chemicals. Acker Process Co., Niagara Falls, N. Y. George W. Speaight, New York.</p> <p>Colors. Joseph Cantor, New York. William H. Scheel, New York. Toch Bros., New York. Type & King, London, England.</p> <p>Crude Rubber. George A. Alden & Co., Boston. A. W. Brunn & Co., New York. Hagemeyer & Brunn, New York. Adolph Hirsch & Co., New York. F. R. Müller & Co., New York. Rubber Trading Co., New York-Boston.</p> <p>Dermatine. The Dermatine Co., London.</p> <p>Drills. Duck (Cotton). J. H. Lane & Co., New York.</p> <p>Gilsonite. William H. Scheel, New York.</p> <p>Graphite. United States Graphite Co., Philadelphia.</p> <p>Graphite Grease. Jos. Dixon Crucible Co., Jersey City.</p> <p>Guayule Rubber. Ed. Maurer, New York.</p>	<p>Gutta-Percha. George A. Alden & Co., Boston. Rubber Trading Co., New York-Boston.</p> <p>Hose Bands, Straps & Menders. Boston Woven Hose & Rubber Co. William Yerdon, Fort Plain, N. Y.</p> <p>Hose Pipes, Nozzles & Couplings. Boston Woven Hose & Rubber Co. Eureka Fire Hose Co., New York. Revere Rubber Co., Boston. A. Schrader's Son, Inc., New York.</p> <p>Hydro-Carbon Products. Geo. A. Alden & Co., Boston. Raven Mining Co., Chicago, Ill. William H. Scheel, New York.</p> <p>Infusorial Earth. Stamford (Conn.) Rubber Supply Co.</p> <p>Kapak. Raven Mining Co., Chicago, Ill.</p> <p>Lampblack. Samuel Cabot, Boston.</p> <p>Lawn-Hose Supporters. O. J. Bailey & Co., Boston.</p> <p>Lead—Blue. Lead—Sublimed White. Fischer Lead Co., Chicago, Ill.</p> <p>Lithopone. Gabriel & Schall, New York.</p> <p>Naphtha. Barrett Mfg. Co., Philadelphia. Paris White and Whiting. H. F. Taintor Mfg. Co., New York.</p>	<p>Reclaimed Rubber. Alkali Rubber Co., Akron, Ohio. American Reclaimed Rubber Co., Rochelle Park, N. J. F. H. Appleton & Son, Boston. Bloomington (N. J.) Soft Rubber Co. E. H. Clapp Rubber Co., Boston, Mass. Danversport Rubber Co., Boston. Derby Rubber Co., Derby, Conn. Eastern Rubber Co., New York. Manufactured Rubber Co. New Jersey Rubber Co., Lambertville, N. J. Pequanoc Rubber Co., Butler, N. J. Philadelphia Rubber Wks., Philadelphia. Stockton Rubber Co., Stockton, N. J. Jos. Stokes Rubber Co., Trenton, N. J. H. & L. Rubber Co., Chester, Pa. U. S. Rubber Reclaiming Wks., N. Y. Westmoreland Rubber Mfg. Co., Grapeville, Pa.</p> <p>AGENTS AND DEALERS. Goldberg & Rathman, Boston, Mass. Philip McGrory, Trenton, N. J. H. P. Moorhouse, Paris, France. Rubber Trading Co., New York-Boston. Wm. Somerville's Sons, Liverpool.</p> <p>Scrap Rubber. L. Albert & Son, Trenton, N. J. Bera & Co., Philadelphia. P. Broomfield & Co., Boston. W. C. Coleman Co., Rochelle Park, N. J. Wm. H. Cummings & Sons, New York. Goldberg & Rathman, Boston, Mass. Theodore Hoffeller & Co., Buffalo, N. Y. A. W. Leslie & Co., Ltd., London, Eng. B. Loewenthal & Co., New York and Chicago. Philip McGrory, Trenton, N. J. Meyer Bros., Philadelphia, Pa. M. Norton & Co., Charlestown, Mass.</p>	<p>Scrap Rubber.—Continued. Henry P. Rindskopf, Brooklyn, N. Y. San Giacomo Sons, Newark, N. J. J. Schnurmman, London. Schwab & Co., Philadelphia. United States Waste Rubber Co., Brookton, Mass. W. J. Wolpert, Odessa, Russia.</p> <p>Substitute. Joseph Cantor, New York. Geo. F. Lufbery Jr., Elizabeth, N. J. Massachusetts Chemical Co., Boston. Wm. H. Scheel, New York. Stamford (Conn.) Rubber Supply Co. Type & King, London, England.</p> <p>Sulphur. Battelle & Renwick, New York. T. & S. C. White Co., New York.</p> <p>Sulphur Chloride. Acker Process Co., Niagara Falls, N. Y. William H. Scheel, New York. George W. Speaight, New York. Stamford (Conn.) Rubber Supply Co.</p> <p>Tire Fabrics. J. H. Lane & Co., New York.</p> <p>Tire Valves. A. Schrader's Son, Inc., New York.</p> <p>Valves for Air Goods. A. Schrader's Son, Inc., New York.</p> <p>Zinc Sulphide. Joseph Cantor, New York. Type & King, London, England.</p> <p>Zinc White. New Jersey Zinc Co., New York. Stamford (Conn.) Rubber Supply Co.</p>
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BUYERS' DIRECTORY

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Rubber Tires and Accessories.

<p>Auto Top Fabrics. Chase & Co., L. C., Boston, Mass. Hodgman Rubber Co., New York. Mutt & Co., L. J., Boston, Mass. National India Rubber Co., Bristol, R. I.</p> <p>Cases, Tire. Gilbert Mfg. Co., New Haven, Conn.</p> <p>Covers, Tire. Wiley & Son Co., Wm. H., Hartford, Conn.</p> <p>Fabrics. Chase & Co., L. C., Boston, Mass. Lane & Co., J. H., New York. Mutt & Co., L. J., Boston, Mass. National India Rubber Co., Bristol, R. I.</p> <p>Insulated Wires. Clark Insulation Co., Boston, Mass. National India Rubber Co., Bristol, R. I.</p> <p>Plats, Automobile. Boston Woven Hose & Rubber Co., Cambridge, Mass. Manhattan Rubber Mfg. Co., New York. National India Rubber Co., Bristol, R. I.</p> <p>Pumps, Tire. Pacific Tucking & Mfg. Co., Brooklyn, N. Y.</p> <p>Repair Stock. Trenton Rubber Mfg. Co., Trenton, N. J.</p> <p>Rims, Wheel. Hartford Rubber Works Co., Hartford, Conn. Goodrich Co., B. F., Akron, Ohio. Goodyear Tire & Rubber Co., Akron, Ohio.</p> <p>Tires. Bailey & Co., C. J., Boston, Mass. Calmon, Ltd., Alfred, Hamburg, Germany.</p>	<p>Continental Caoutchouc Co., New York. Consolidated Rubber Tire Co., New York—Akron, Ohio. Diamond Rubber Co., Akron, Ohio. Electric Rubber Mfg. Co., Rutherford, N. J. Firestone Tire & Rubber Co., Akron, Ohio. Fisk Rubber Co., Chicopee Falls, Mass. F. W. Skinner, Advance Tire Co., Valley Falls, R. I. G. & J. Tire Co., Indianapolis, Ind. Goodrich Co., B. F., Akron, Ohio. Harburg Tire Co., Harburg, Germany. Harburg-Vienna India Rubber Co., Harburg, Germany. Hartford Rubber Works Co., Hartford, Conn. Healy Leather Tire Co., New York. Indiana Rubber & Insulated Wire Co., Jonesboro, Ind. International A. & V. Tire Co., Milltown, N. J. Kasner, A. H., New York. Macintosh & Co., Ltd., Chas., Manchester, England. Michelin Products Selling Co., New York. Michelin Tire American Agency, Inc., New York. Mitchell Punctureless Pneumatic Tire Co., Swampscott, Mass. Morgan & Wright, Chicago, Ill. Motz Clincher Tire & Rubber Co., Akron, Ohio. North British Rubber Co., Ltd., Edinburgh, Scotland. Pirelli & Co., Milan, Italy. Republic Rubber Co., Youngstown, Ohio. Sirdar Rubber Co., Ltd., London, England. St. John Rubber Tire Co., Inc., New York. Sweet Tire & Rubber Co., Batavia, N. Y. Swinehart Clincher Tire & Rubber Co., Akron, Ohio.</p>	<p>Trenton Rubber Mfg. Co., Trenton, N. J. United Berlin Frankfurt India Rubber Co., Ltd., Berlin, Germany. Universal Tire Co., N. Y.</p> <p>Tire Applying Machines. Nelson & Le Moon, Chicago, Ill.</p> <p>Tire Cases. Gilbert Mfg. Co., New Haven, Conn.</p> <p>Tire Covers. Wiley & Son Co., Wm. H., Hartford, Conn.</p> <p>Tire Fabrics. Lane & Co., J. H., New York.</p> <p>Tire Pumps. Pacific Tucking & Mfg. Co., Brooklyn, N. Y.</p> <p>Tire Repairing. Boston Vulcanizing Co., Boston, Mass. Foote Rubber Co., D. E., Cleveland, Ohio. Republic Rubber Tire & Shoe Co., New York. Voorhees Rubber Mfg. Co., Jersey City, N. J.</p> <p>Treads. Boston Woven Hose & Rubber Co., Cambridge, Mass. Leather Tire Goods Co., Newton Upper Falls, Mass. Manhattan Rubber Mfg. Co., New York.</p> <p>Valves, Tire. Schrader's Sons, Inc., A, New York.</p> <p>Vulcanizer, Tire. Auto Tire Vulcanizing Co., Lowell, Mass.</p> <p>Wires, Insulated. Clark Insulation Co., Boston, Mass. National India Rubber Co., Bristol, R. I.</p>
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